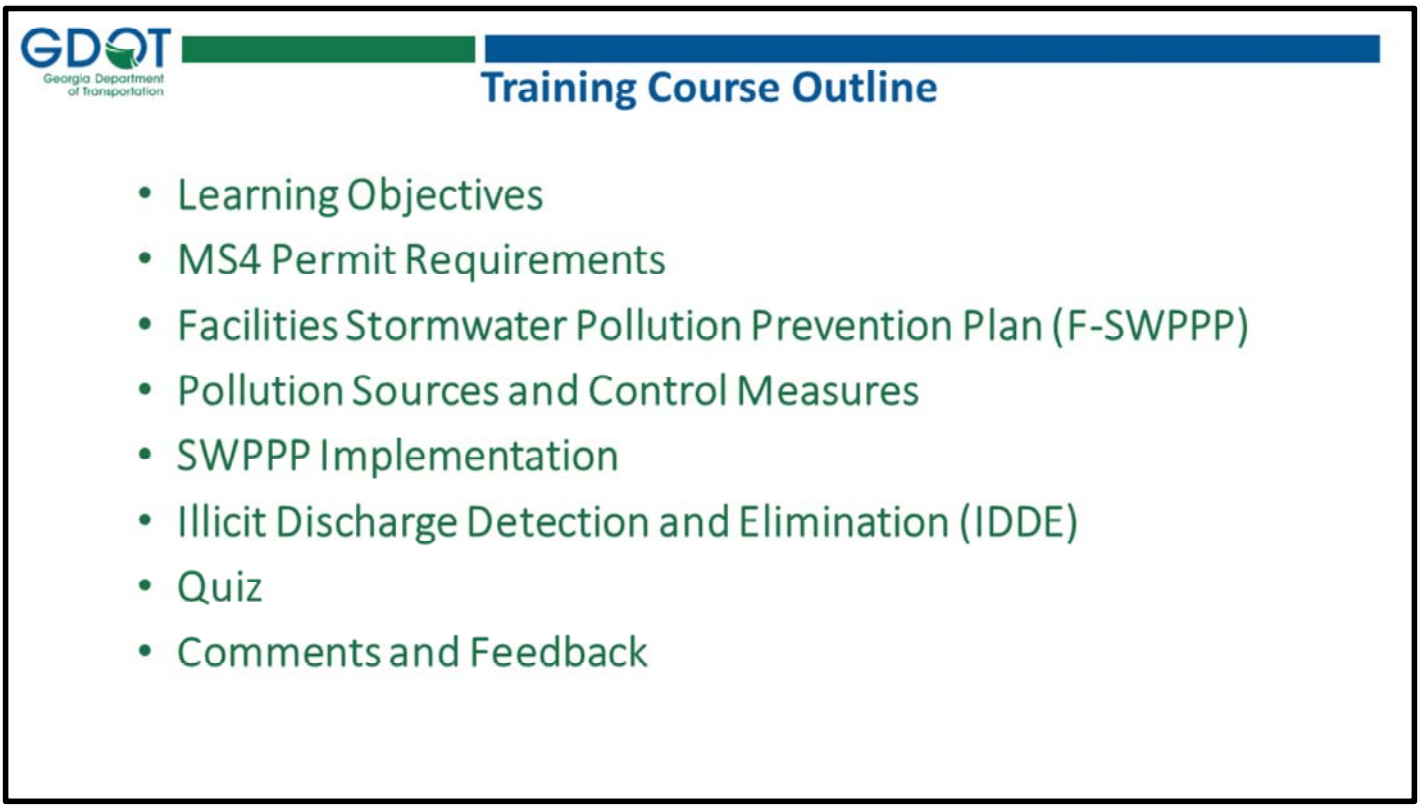
This course provides GDOT personnel and contractors with important awareness-level training on stormwater pollution prevention practices, illicit discharge detection and elimination, and the fundamental requirements of a municipal separate storm sewer system permit which has been issued to GDOT by the Georgia Environmental Protection Division. Together, we share responsibility for protecting our water resources and the environment we live in. Your understanding of this course material is essential to meeting that responsibility and ensuring GDOTs compliance with its permit requirements.



Review the above training course outline. Key acronyms that will be used throughout this course include:

1. GDOT (Georgia Department of Transportation)
2. MS4 (Municipal Separate Storm Sewer System)
3. SWPPP (Stormwater Pollution Prevention Plan)
4. F-SWPPP (Facilities Stormwater Pollution Prevention Plan)
5. IDDE (Illicit Discharge Detection and Elimination)
6. GA EPD (Georgia Environmental Protection Division)

Learning Objectives

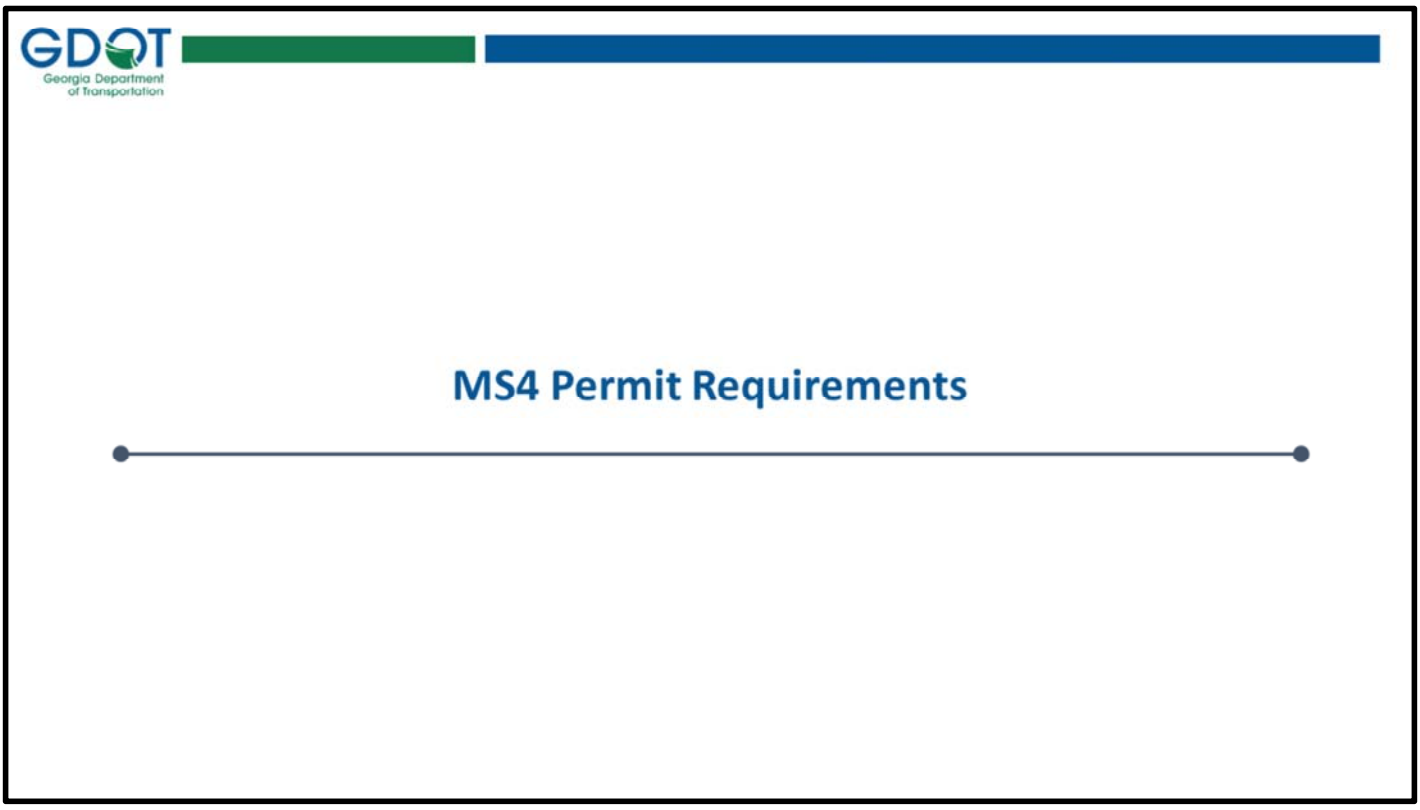
- Understand the basics of GDOT's MS4 Permit
- Understand SWPPP elements
- Understand and identify typical pollutant sources and control measures

Review the above learning objectives. Upon completion of this course, you should be able to understand the general requirements of GDOT's MS4 permit, and understand what a SWPPP is and the information it contains. You will also learn about the potential sources of pollution that exist at GDOT facilities and what GDOT does to control those sources to eliminate or reduce their potential impact to our lakes, rivers, streams, ponds, wetlands, and coastal waters.

Learning Objectives (cont'd)

- Understand how control measures prevent stormwater pollution
- Identify control measures and potential deficiencies during a site inspection.
- Identify possible illicit discharges and understand how to report them.

Upon completion of this course, you will understand the importance of control measures to eliminate or reduce sources of pollution at GDOT facilities. You will also understand the characteristics of an illicit discharge and will be able to spot an unauthorized releases of pollutants to surface water.



In this section we will discuss stormwater and the general requirements of GDOTs MS4 Permit to protect stormwater quality.

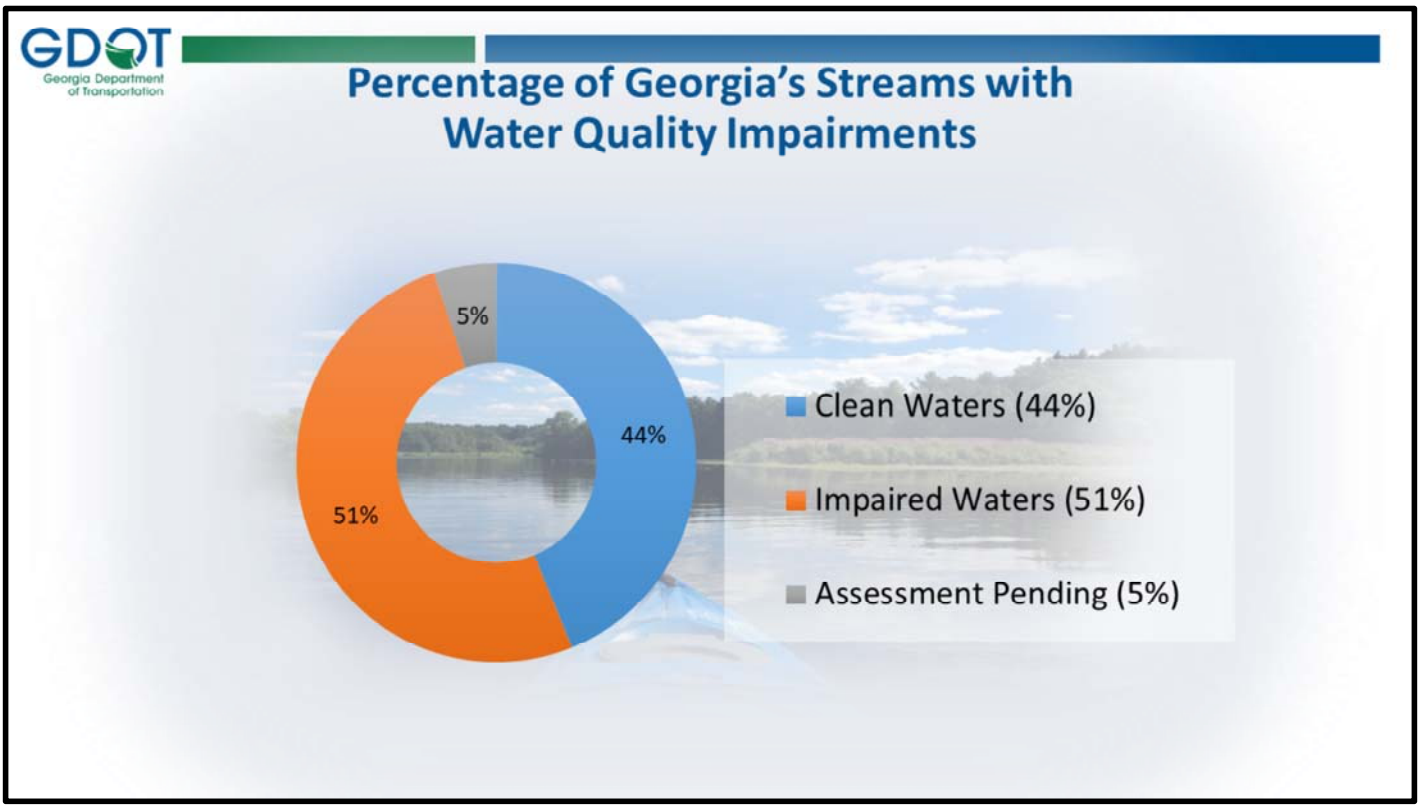
What is Stormwater?

Stormwater originates from rain and snow events

Source: GDOT

Each year, Georgia receives approximately 50 inches of precipitation in the form of rain, sleet, snow, and ice. As the precipitation contacts the ground and flows over the ground surface it is known as stormwater. Stormwater is able to pick up and transport pollutants and contaminants that may exist on the ground surface. All stormwater eventually flows to surface water, so any contaminants it contains are discharged to surface water. Stormwater can also contribute to erosion (removal) of soil and materials into surface water.

Water is essential for life and having access to clean water is critical to our everyday lives. Estimates vary, but each person uses about 80-100 gallons of water per day. We rely on clean water for drinking, bathing, cooking, cleaning, manufacturing, recreation (boating, fishing, hunting, swimming), etc. Clean water is also critical to healthy ecosystems, the sustainability of our flora and fauna, public health and welfare, property values, and aesthetics.



Georgia has established standards for water quality based on the designated use of the water. The 6 designated uses, or water quality classifications, are: 1) drinking water supply 2) recreation, 3) fishing and fish habitat, 4) coastal fishing, and 5) wild river and, 6) scenic rivers.

There are over 70,000 miles of rivers and streams in GA, which is enough linear miles to circle the earth 2.75 times. Approximately 51% of Georgia surface waters are impaired, meaning that they are not suitable for their designated use without treatment.
It is hard to reverse this condition. The first step is to stop current harmful activities and implement pollution prevention practices.

Importance of Stormwater Management

Estimated E. Coli bacteria counts are monitored for the Chattahoochee River and reported at http://ga2.er.usgs.gov/bacteria/

Current National Park Service Chattahoochee River Bacteria Health Advisories

Chattahoochee River at Norcross (Medlock Br. Rd)
Currently, there is not a National Park Service health advisory in effect

Chattahoochee River at Atlanta (Paces Ferry Rd)
Currently, there is not a National Park Service health advisory in effect

Current turbidity and estimated E. coli bacteria counts for the Chattahoochee River

Most recent turbidity			Estimated
Site	Date/Time	Turbidity, in NTU	E. coli count
Chattahoochee River at Norcross (Medlock Br. Rd)	07/29 10:15 AM EST	2	33
Chattahoochee River at Atlanta (Paces Ferry Rd)	07/29 9:45 AM EST	7	84

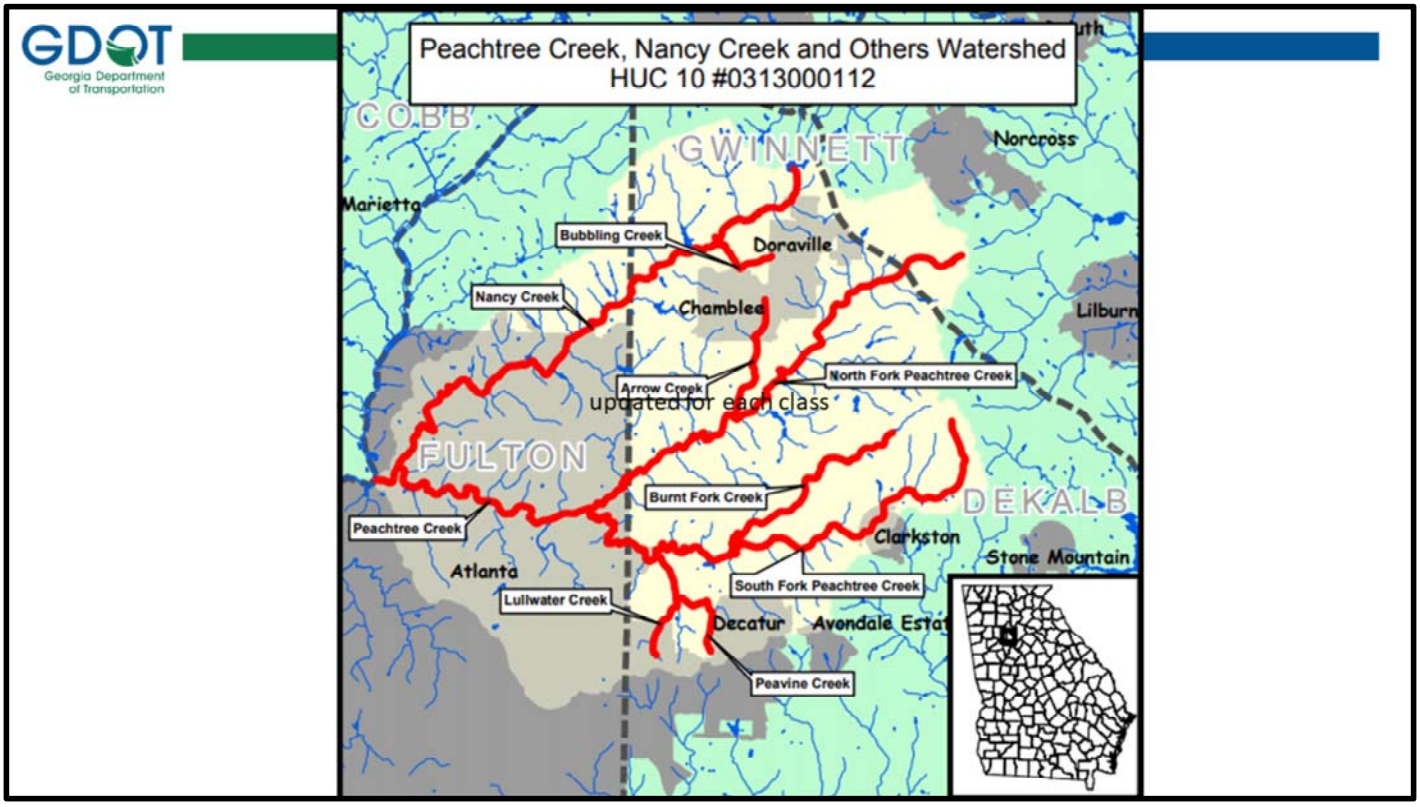
Surface water quality in Georgia is monitored frequently. Every 2 years, the State of Georgia issues a report notifying the federal EPA of the quality of surface waters in the State. The report identifies which surface waters are clean (i.e., suitable for designated uses), and which waters are impaired (i.e., not suitable for designated uses). The list of surface waters that are not suitable for their designated uses is called the 303(d) List. It is the goal of the State of Georgia that all of its waters support their designated uses. Water quality information is used to manage activities in the watersheds and to limit or restrict our use of available water resources as necessary to protect public health, safety, general welfare, and the environment.

For example, the USEPA has determined that E. coli bacteria counts above 235 colonies per 100 milliliters indicate that more than 8 people out of 1,000 who come into contact with the water may become sick. It is important to realize that as E. coli counts go up, the chance that someone will get sick also goes up.

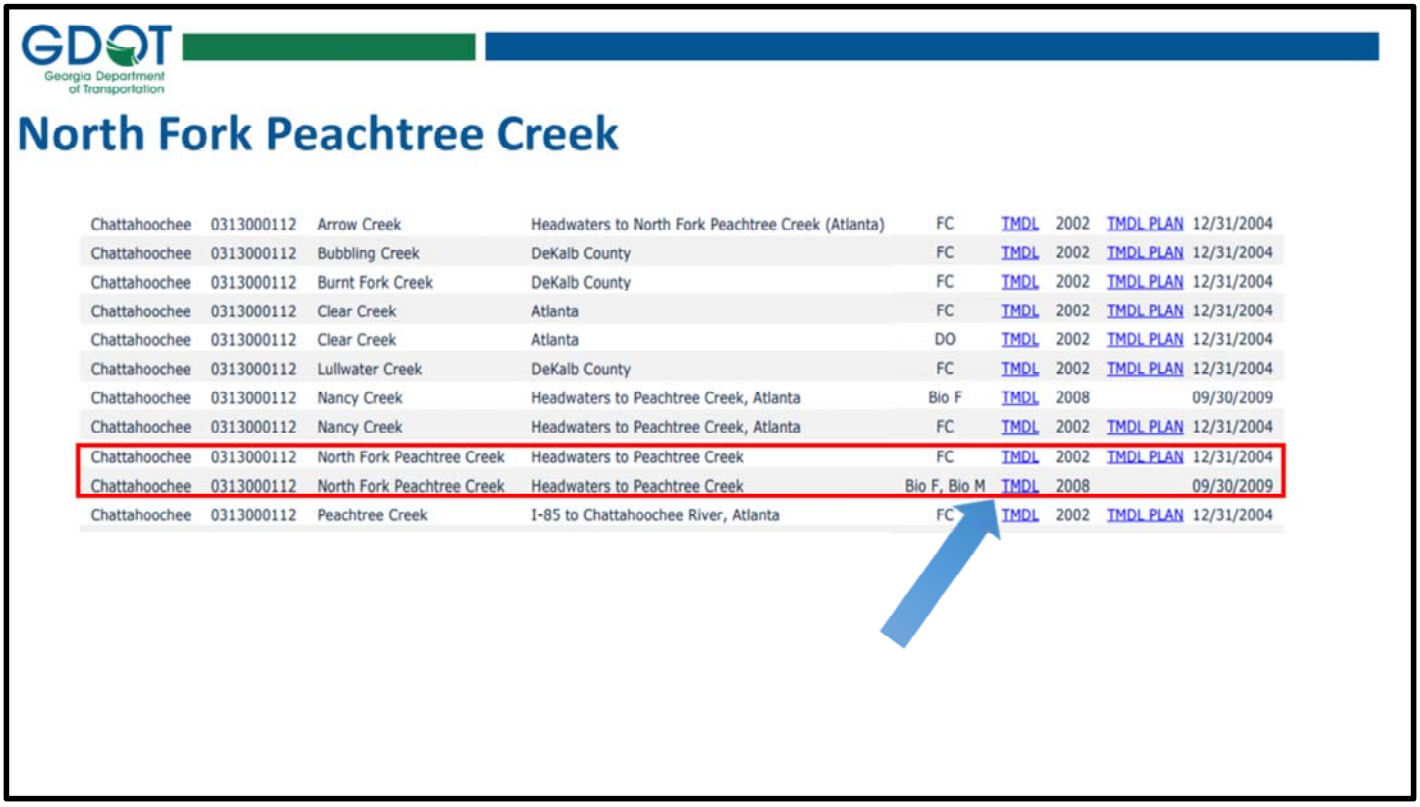
GDOT Georgia Department of Transportation

WHERE IS YOUR STORMWATER GOING?

Most stormwater flowing across GDOT facilities eventually discharges to surface water. Stormwater may flow directly into a lake, river, stream, coastal water, or wetland; or it may enter a catchbasin, swale, ditch, or other structure that eventually empties into a surface water. For example, here is the District 7 office in Chamblee; it drains to North Fork Peachtree Creek.



This map shows impaired waterbodies in the vicinity of the District 7 Office. You can obtain information on impaired water bodies in all watershed across the state from Georgia EPD.



Here are some additional details on the Stream impairment downstream of the District 7 office.

The type of impairments are listed by the below abbreviations.
FC = Fecal Coliform
Bio F = Impaired Fish Community
Bio M = Impaired Macroinvertebrate Community
DO = Dissolved Oxygen

The Total Maximum Daily Load (TMDL) Implementation Plan can be downloaded from Georgia EPD for additional information.

GDOT Georgia Department of Transportation

North Fork Peachtree Creek

Total Maximum Daily Load

Evaluation

for

Twenty-Five Stream Segments

in the

Chattahoochee River Basin

For Sediment

(Biota Impacted)

Submitted to:

The U.S. Environmental Protection Agency
Region 4
Atlanta, Georgia

Submitted by:

The Georgia Department of Natural Resources
Environmental Protection Division
Atlanta, Georgia

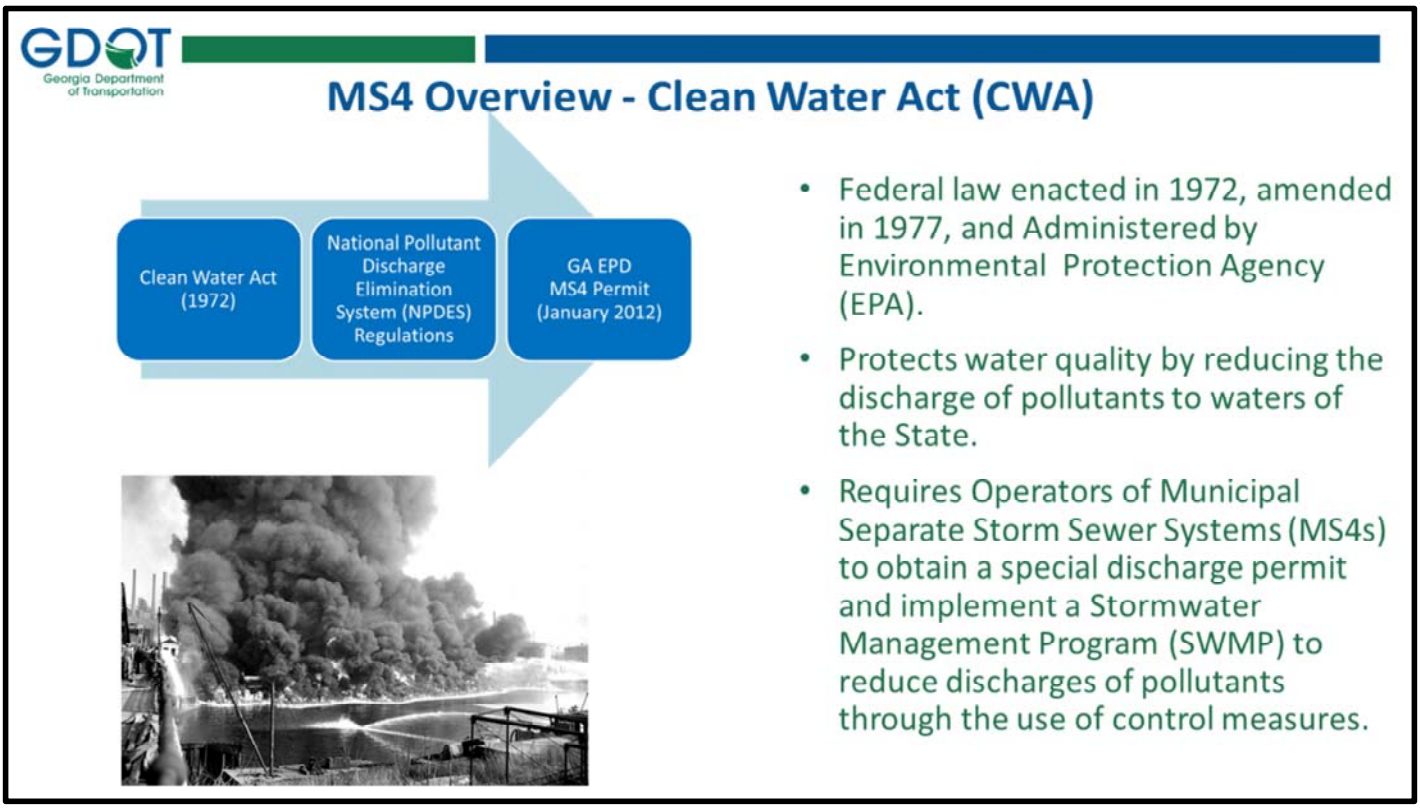
January 2008

	Sediment Load (tons/yr)																
Name	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial Industrial Transportation	Bare Rock Sand and Clay	Quarries Strip Mines Gravel Pits	Deciduous Forest	Evergreen Forest	Mixed Forest	Deciduous Shrubland	Pasture/Hay	Row Crops	Other Grasses (Urban Recreational)	Woody Wetland	Road	Total	Load (ton/acre/yr)
Mud Creek	0.0	189.0	18.3	8.2	0.0		9.7	0.7	0.2	6.5	490.5		49.1	26.2	108.6	907.1	0.15
Nancy Creek	0.0	1,160.7	116.4	31.9	0.0	0.0	7.8	7.9	0.5	0.5	46.2	0.0	311.9	14.0	760.5	2,458.4	0.13
Nickajack Creek	0.0	838.3	37.4	6.3	0.0	0.0	19.5	6.6	0.5	1.3	80.1	0.0	158.6	34.2	1,007.9	2,190.7	0.11
North Fork Peachtree Creek	0.0	228.2	60.7	19.3	0.0		0.3	0.5	0.0	0.2	7.8		38.1	8.8	304.2	668.1	0.10
Noses Creek	0.0	91.8	1.9	0.4	0.0	928.4	15.4	7.4	0.2	0.8	74.4		26.7	7.4	200.6	1,355.5	0.36
Pea Creek	0.0	18.6	0.1		0.0		13.9	4.0	0.1	3.3	71.7		22.1	16.3	126.8	276.9	0.06
Six Mile Creek	0.0	6.5	4.5	0.2	0.0	3,649.6	5.2	0.8	0.2	4.5	120.0		7.0		32.8	3,831.4	2.03
South Fork Limestone Creek/Limestone Creek	0.0	94.0	9.7	1.5	0.0		0.9	0.6	0.1		9.3		17.5		135.5	269.2	0.25
Suwanee Creek	0.0	538.2	42.7	12.4	0.0		16.7	3.6	0.8	5.6	326.3		71.4	38.1	353.4	1,409.0	0.16
Tributary to Limestone Creek	0.0	41.1	3.6	0.3	0.0		1.2	0.1	0.0	0.4	4.5		11.1		173.8	236.1	0.26
Turner Creek	0.0	14.6	2.6	0.0	0.0		96.8	11.1	4.5	18.3	563.9	113.5	61.0	3.7	172.6	1,062.6	0.21
Ward Creek	0.0	229.4	4.6	0.4	0.0		4.5	5.7	0.3	0.2	23.5		73.1	13.3	420.8	775.8	0.17
White Creek	0.0	19.2	3.0	0.1	0.0		7.8	1.0	0.4	4.4	872.1		11.6		128.3	1,047.7	0.20

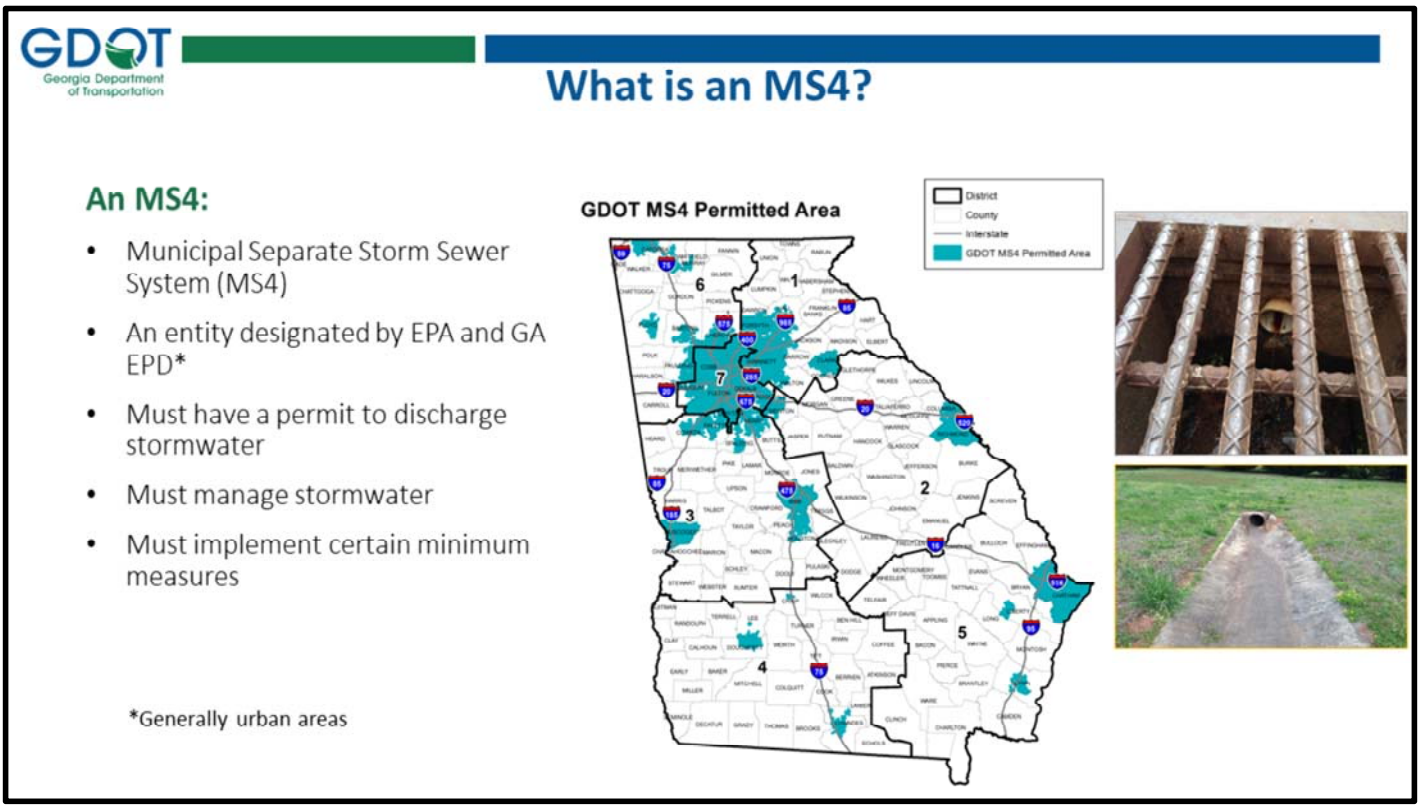
The State of Georgia has identified twenty-five (25) stream segments located in the Chattahoochee River Basin as water quality limited (i.e. 303(d) listed as Biota Impacted) due to sedimentation. The water use classification of all of the impacted streams is Fishing. The general water quality criteria not being met states:

> All waters shall be free from material related to municipal, industrial or other discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses.

The Total Maximum Daily Load (TMDL) Evaluation for Twenty-Five Stream Segments in the Chattahoochee River Basin, which includes North Fork Peachtree Creek, will detail the sources of impairment and a strategy to improve the waterbody.



The Clean Water Act, or "CWA", is a federal law that was enacted in 1970 to protect Waters of the State. Under the CWA, operators of MS4s are required to obtain special permitting and implement practices to reduce the discharge of polluted water into Waters of the State. Since 1972, the CWA has been amended to regulate more pollutant sources and activities.



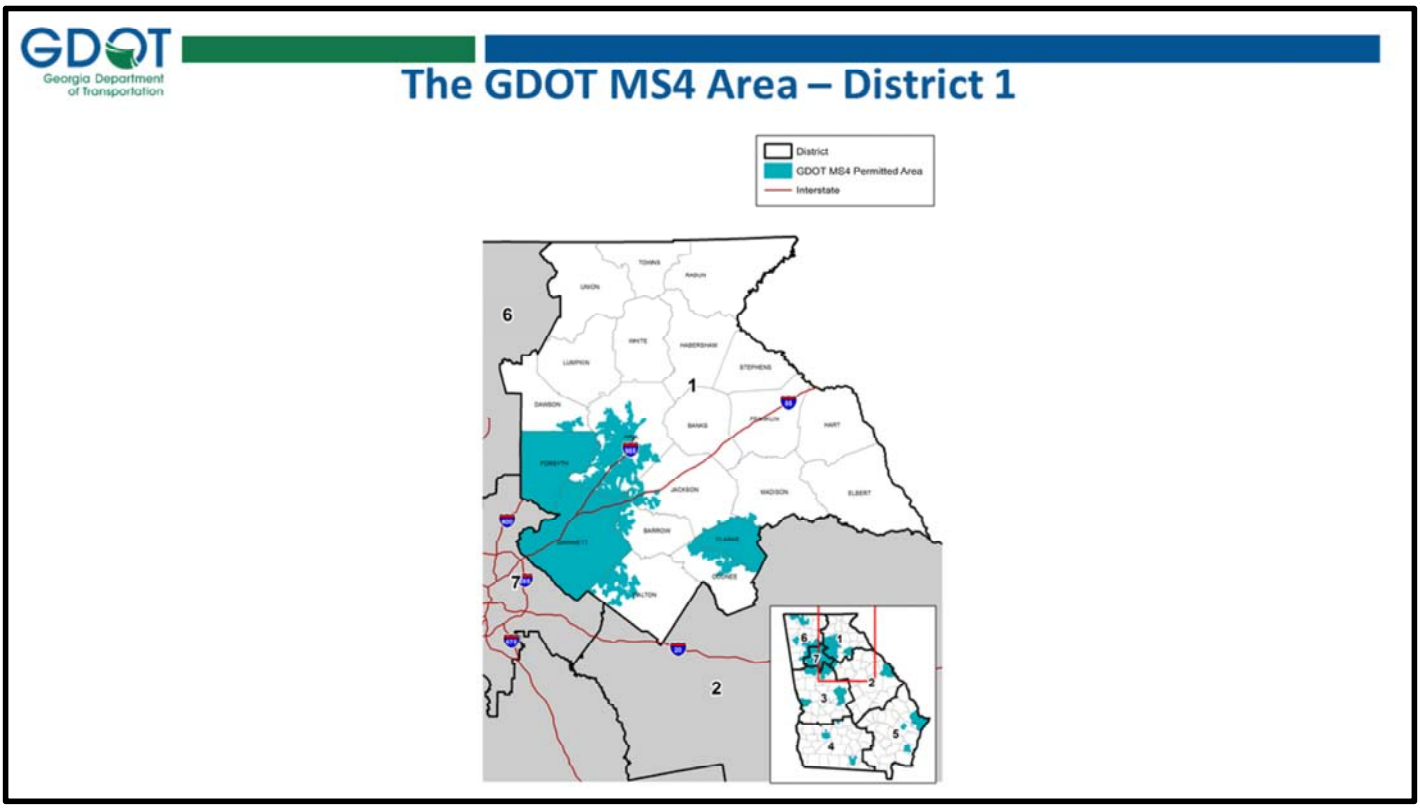
So what exactly is an MS4? A municipal separate storm sewer system, or MS4, refers to a conveyance or system of conveyances that is designed to discharge stormwater to surface water. Conveyances include roads, streets, catch basins, curbs, gutters, ditches, channels, drains and inlet structures. The term MS4 also refers to a regulated pollution control area designated by EPA and GA EPD based upon population density and certain land use characteristics. Regulated MS4 areas have well-defined geographic boundaries, but the boundaries may be irregular and do not necessarily coincide with city or county lines.

Stormwater from MS4 systems discharge into surface water without any pre-treatment to remove pollutants. This is different from sanitary wastewaters that are collected in a separate, sanitary sewer system and receive treatment at a wastewater treatment plant to remove pollutants before being discharged to surface water.

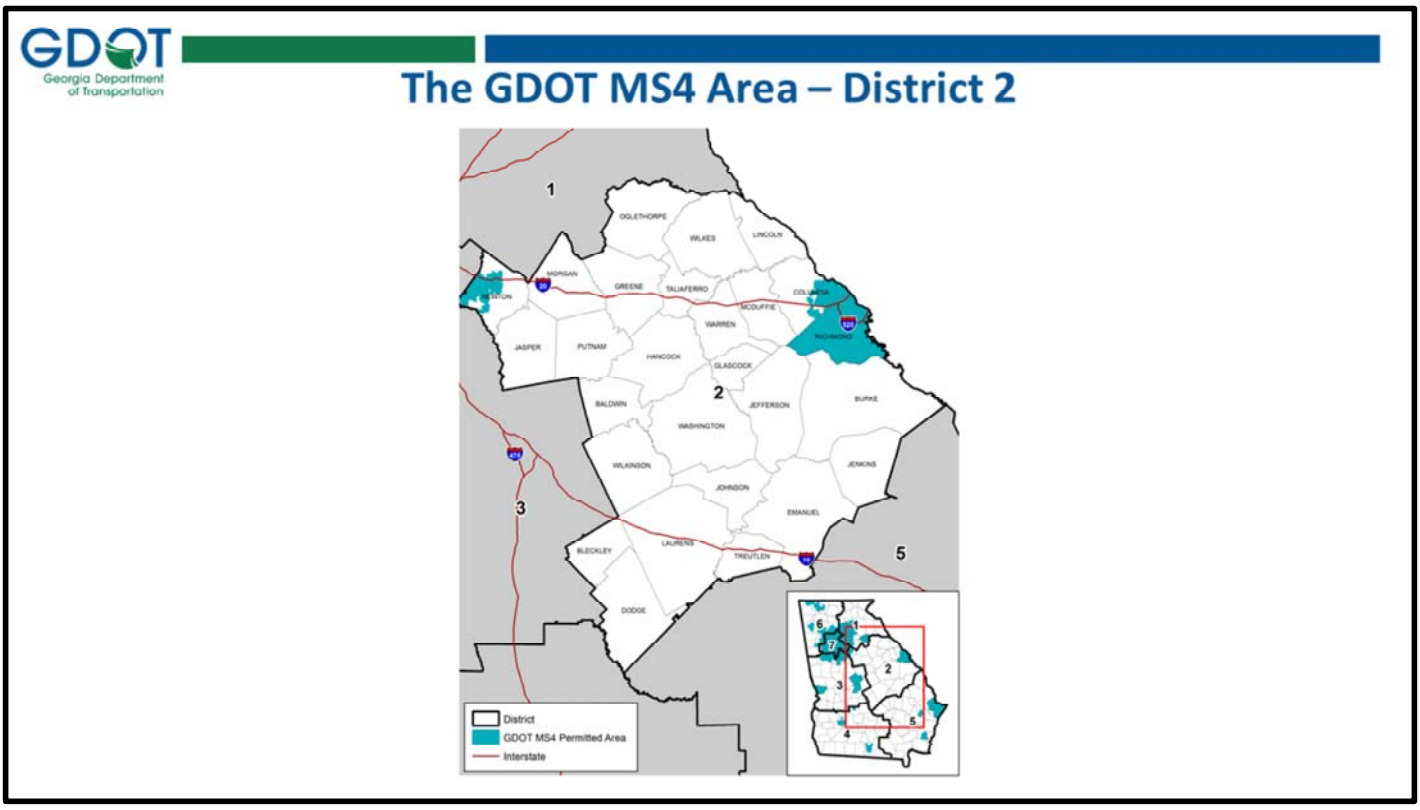
Because stormwater in an MS4 area does not receive any treatment before entering surface water, industrial activities that have a potential to generate pollutants are required to have a permit before it can discharge stormwater from its property. Industrial activities are also required to implement minimum control measures to prevent stormwater pollution. A **Control Measure** is an action, device, practice, or plan that is used to reduce the potential for pollutants to contaminate stormwater that flows into surface water.

While only certain industrial activities in an MS4 area are subject to permitting and control measures, GDOT policy is that **ALL** GDOT facilities in the State of Georgia will implement

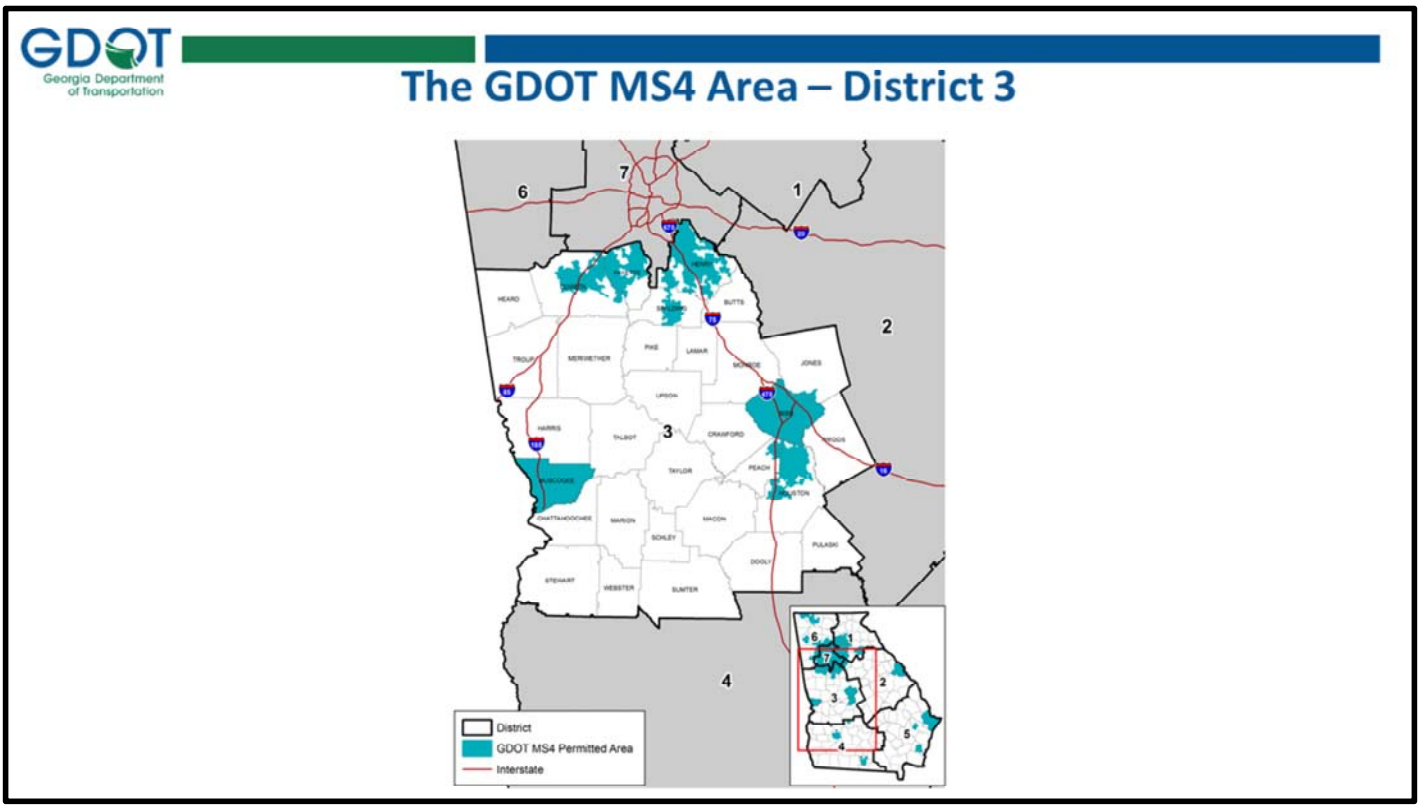
control measures, whether or not a facility is located within a designated MS4. However, GDOT facilities that are not located in a designated MS4 areas are not subject to the regulatory reporting and inspections.


GDOT
Georgia Department of Transportation
The GDOT MS4 Area – District 1
District
GDOT MS4 Permitted Area
Interstate
6
1
7
2

District 1


GDOT
Georgia Department of Transportation
The GDOT MS4 Area – District 2
1
2
3
5
OGLETHORPE
WILKES
LINCOLN
GREENE
TALIAFERRO
COLUMBIA
MCDUFFIE
WARREN
JASPER
PUTNAM
HANCOCK
GLASCOCK
BALDWIN
JEFFERSON
BURKE
WASHINGTON
WILKINSON
JENKINS
JOHNSON
EMANUEL
BLECKLEY
LAURENS
TREUTLEN
DODGE
District
GDOT MS4 Permitted Area
Interstate

District 2


GDOT
Georgia Department of Transportation
The GDOT MS4 Area – District 3
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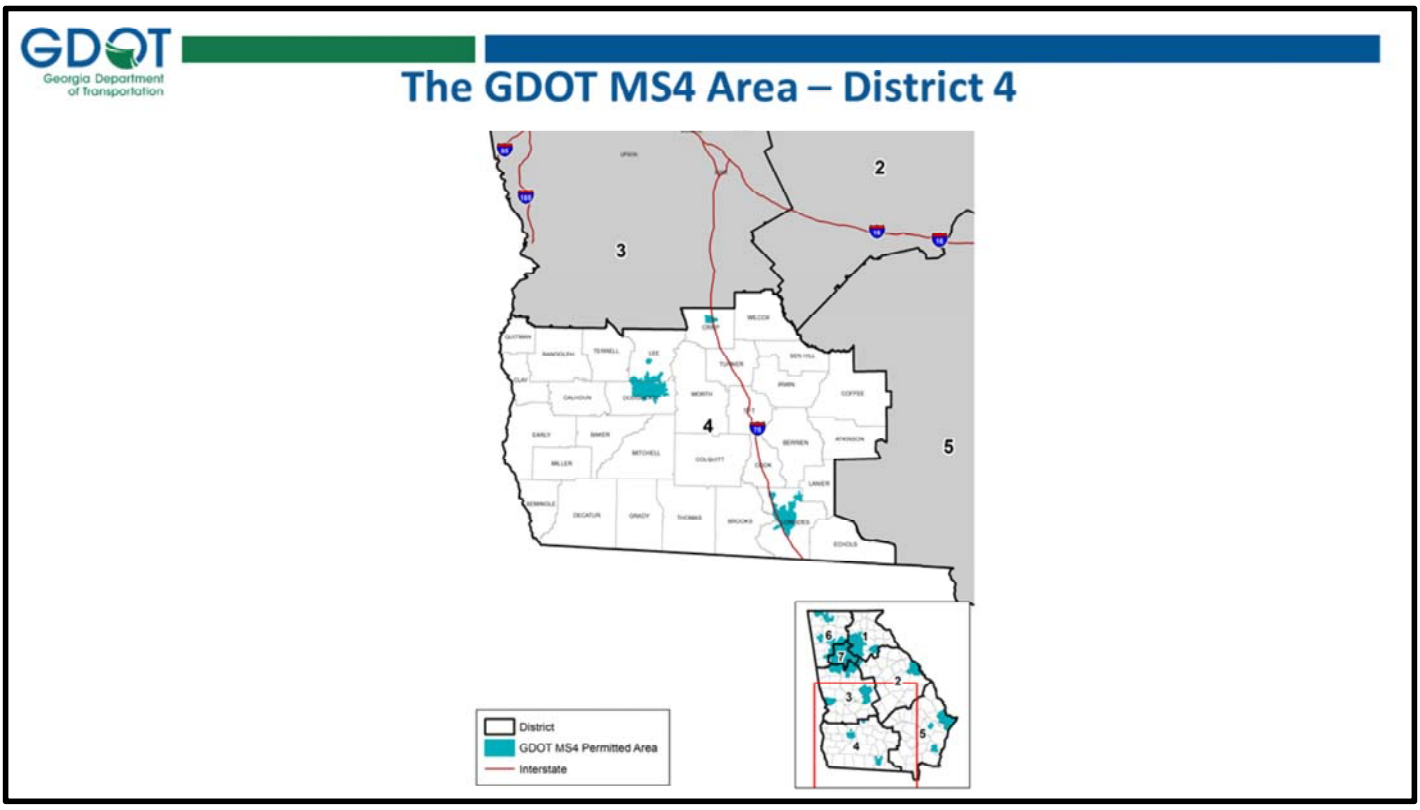
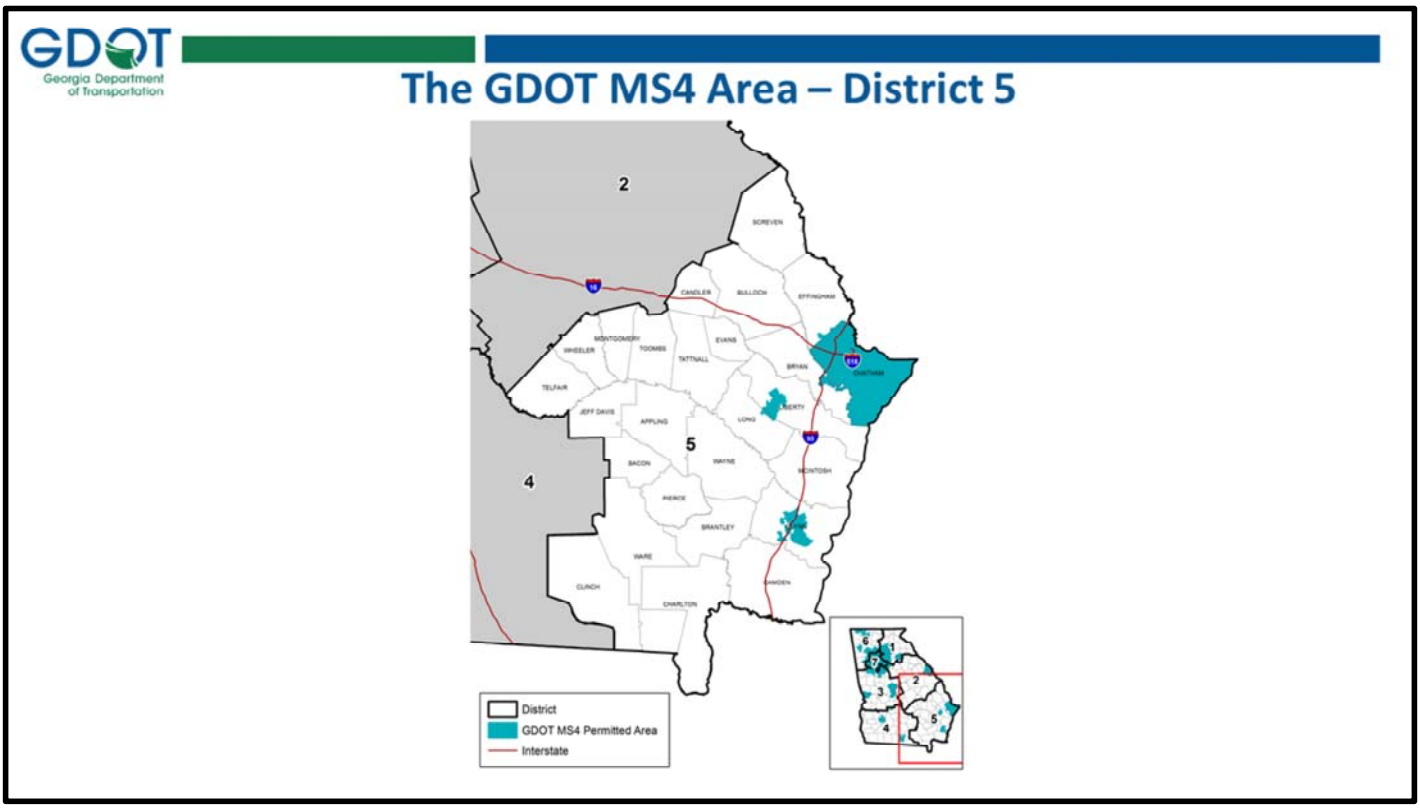
7
1
2
3
4
District
GDOT MS4 Permitted Area
Interstate

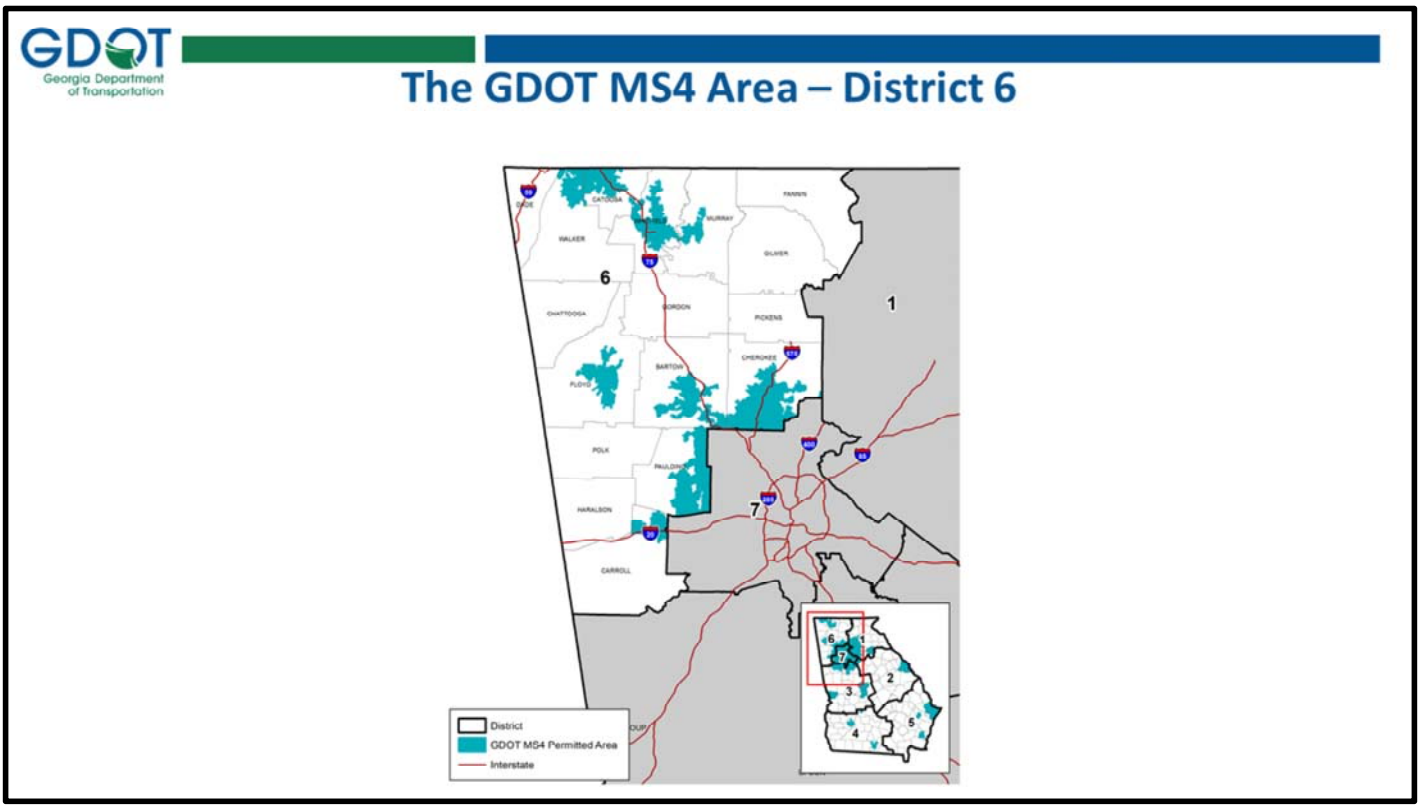
District 3


GDOT
Georgia Department of Transportation
The GDOT MS4 Area – District 4
2
3
4
5
District
GDOT MS4 Permitted Area
Interstate

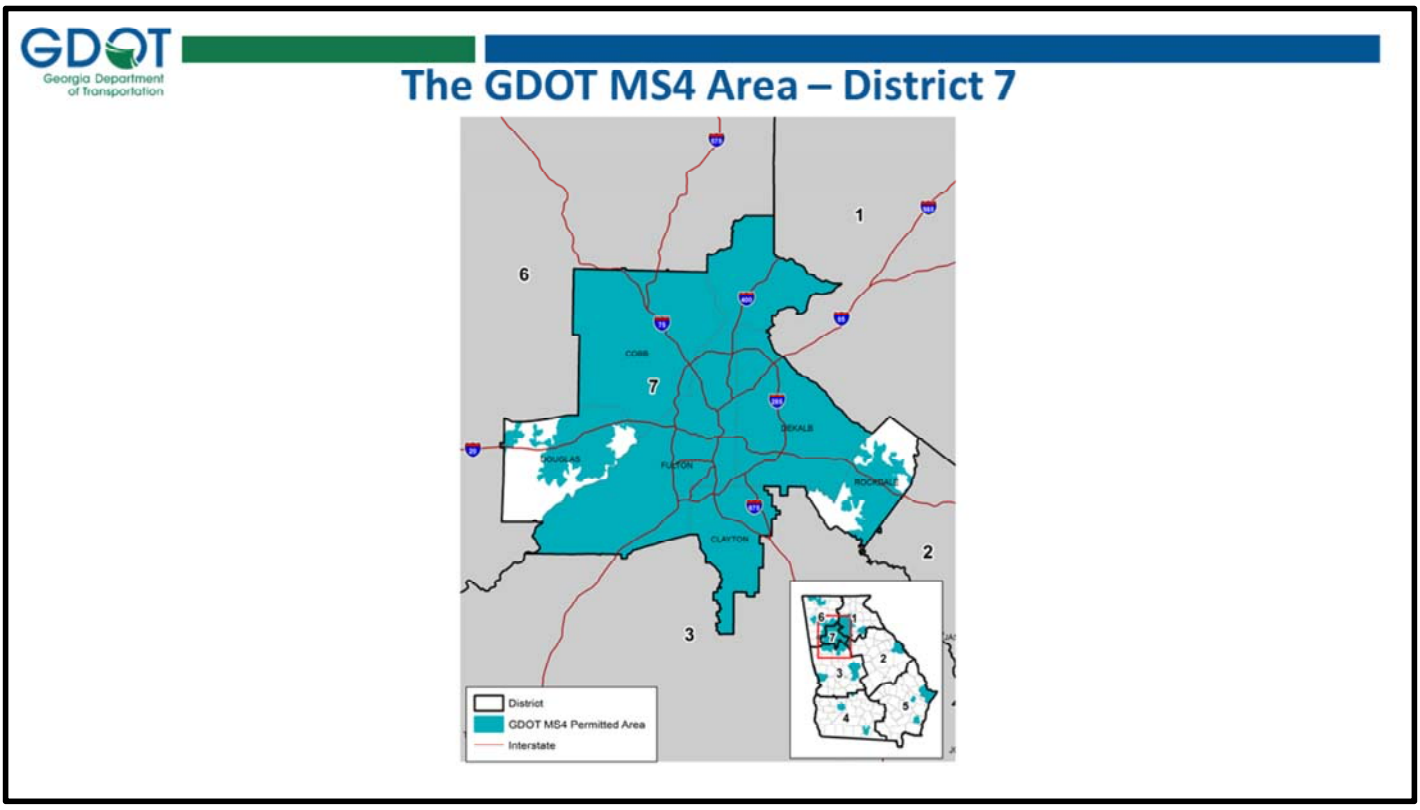
District 4


GDOT
Georgia Department of Transportation
The GDOT MS4 Area – District 5
2
4
5
District
GDOT MS4 Permitted Area
Interstate

District 5

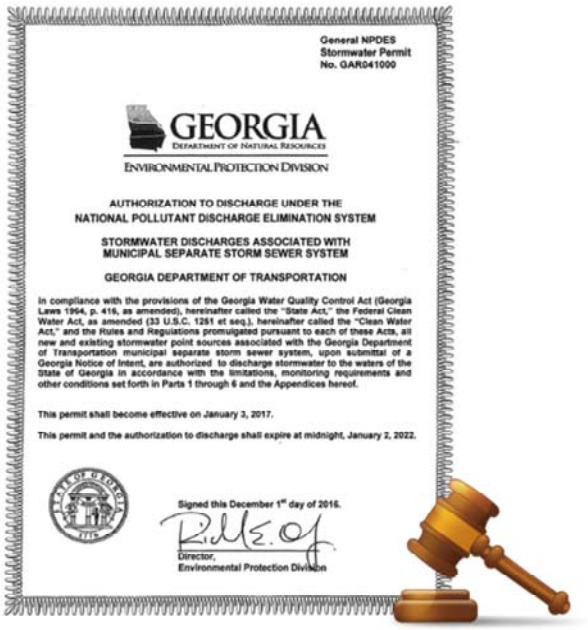

GDOT
Georgia Department of Transportation
The GDOT MS4 Area – District 6
6
1
7
District
GDOT MS4 Permitted Area
Interstate

District 6


GDOT
Georgia Department of Transportation
The GDOT MS4 Area – District 7
1
2
3
6
7
COBB
DEKALB
DOUGLAS
FULTON
ROCKDALE
CLAYTON
District
GDOT MS4 Permitted Area
Interstate

District 7

It is a Legal Requirement


General NPDES
Stormwater Permit
No. GAR041000

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

STORMWATER DISCHARGES ASSOCIATED WITH
MUNICIPAL SEPARATE STORM SEWER SYSTEM

GEORGIA DEPARTMENT OF TRANSPORTATION

In compliance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p. 416, as amended), hereinafter called the "State Act," the Federal Clean Water Act, as amended (33 U.S.C. 1251 et seq.), hereinafter called the "Clean Water Act," and the Rules and Regulations promulgated pursuant to each of these Acts, all new and existing stormwater point sources associated with the Georgia Department of Transportation municipal separate storm sewer system, upon submittal of a Georgia Notice of Intent, are authorized to discharge stormwater to the waters of the State of Georgia in accordance with the limitations, monitoring requirements and other conditions set forth in Parts 1 through 6 and the Appendices hereof.

This permit shall become effective on January 3, 2017.

This permit and the authorization to discharge shall expire at midnight, January 2, 2022.

Signed this December 1st day of 2016.

Director,
Environmental Protection Division

GDOT's NPDES MS4 Permit, first issued January 2012, was effective for five years and it was renewed in January 2017. It will similarly expire at the end of the 2021 and be renewed for another 5 years.

It is enforceable and requires that GDOT implement certain minimum measures.

To comply with MS4 permit requirements GDOT prepared a Facilities Stormwater Pollution Prevention Plan (F-SWPPP).

The GA EPD has granted GDOT a stormwater discharge permit, because it performs industrial activities inside an MS4 area and operates and maintains a system of stormwater drainage structures in several MS4 areas in the State of Georgia. GDOT must conduct its activities in accordance with the Permit requirements.

One of GDOT's many requirements under the permit is to prepare a manual detailing procedures for routine maintenance activities to prevent pollution. GDOT uses the Facilities Stormwater Pollution Prevention Plan, or F-SWPPP, to meet this need. We will discuss the F-SWPPP later in this course.

Another requirement of GDOTs Permit is to implement six minimum control measures. These minimum control measures describe GDOTs obligation to involve the general public in stormwater management issues, develop and implement a program to identify and respond to illegal surface water discharges, protect stormwater during and after construction activities, and implement routine pollution prevention practices at its municipal facilities. This training covers Pollution Prevention/Good Housekeeping for Municipal Operations and IDDE. Good Housekeeping is an important pollution prevention practice and will be discussed at length in this course.

Website and Video

http://www.dot.ga.gov/Stormwater

Click on the link to the GDOTs public outreach video about stormwater issues.

Permit Compliance is Subject to Audit

- GDOT was audited March 19 through 23, 2018 by EPA and EPD
  - Illicit Discharge Detection and Elimination
  - Construction Site Stormwater Runoff Control (Erosion Control)
  - Post-Construction Stormwater Management
  - Pollution Prevention/Good Housekeeping for Municipal-Type Operations
- Specific facilities were selected for a same day inspection of pollution prevention measures by EPA and EPD


GEORGIA DEPARTMENT OF TRANSPORTATION
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM INSPECTION REPORT

GEORGIA DEPARTMENT OF TRANSPORTATION

600 West Peachtree Street
Atlanta, GA 30308

Field Activity Dates: March 19–23, 2018

U.S. Environmental Protection Agency, Region IV
Sam Nunn Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303-8963

Compliance with GDOT's MS4 permit is measured through annual reporting and MS4 programs are subject to audit. In March 2018, the Environmental Protection Agency and the Environmental Protection Division audited GDOT's MS4 program and focused on four major components of the permit. There was no advance notice of the facilities that were going be included in the audit. 27 observations/deficiencies were flagged for improvement. Many of these involved inspection and maintenance procedures, facility maintenance, and general pollution prevention.

Permit Compliance is Subject to Audit

- EPA/EPD asked GDOT staff what to do if they find a non-stormwater (illicit) discharge
- EPA/EPD wanted to observe GDOT staff performing facility inspections using the forms in the F-SWPPP manual
- EPA/EPD provided a summary report with observations and deficiencies
- GDOT is required to report to EPD on compliance status.


GEORGIA DEPARTMENT OF TRANSPORTATION
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM INSPECTION REPORT

GEORGIA DEPARTMENT OF TRANSPORTATION

600 West Peachtree Street
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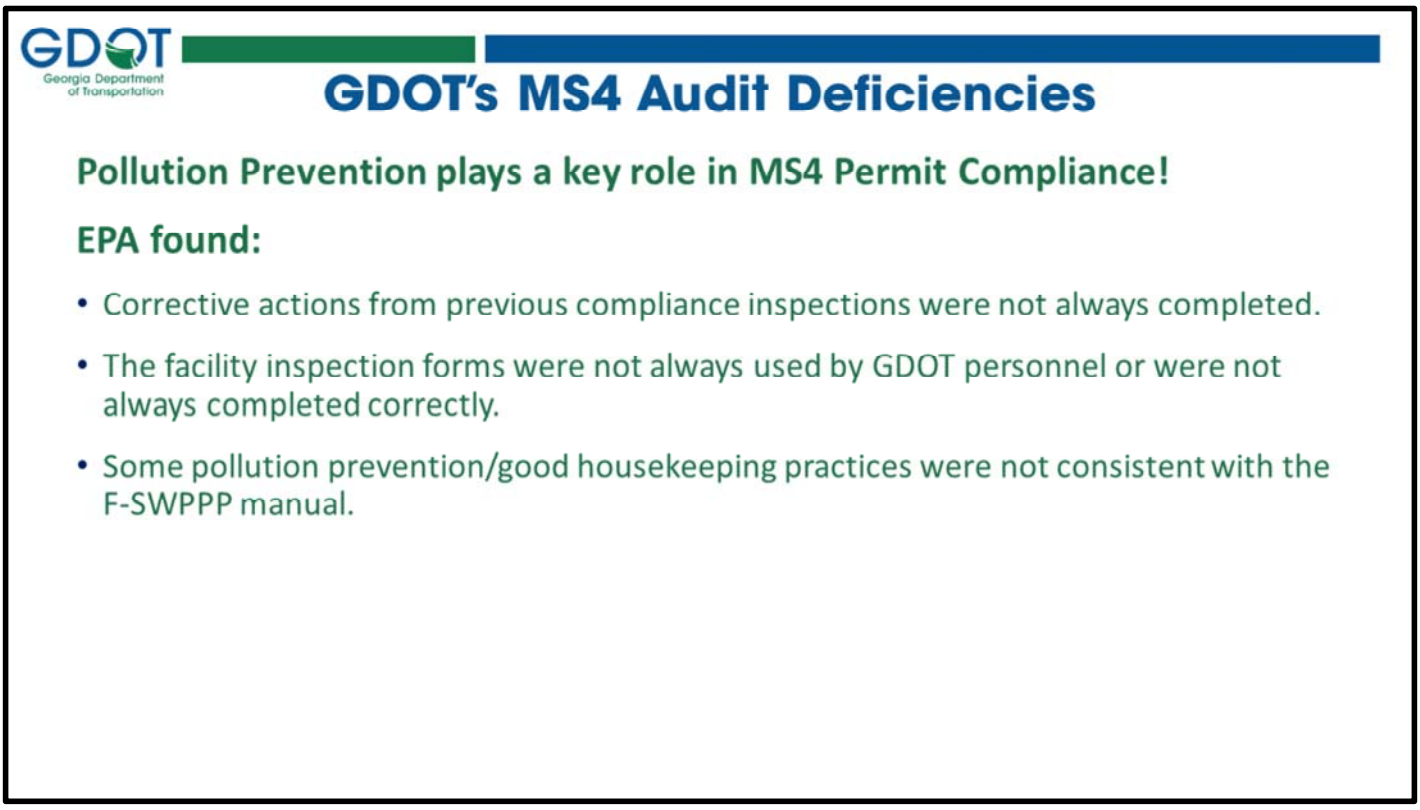
Atlanta, GA 30303-8963

EPA and EPD performed the audit together. EPA/EPD preferred to observe GDOT staff performing inspections and answering questions about the MS4 program instead of consultants. The emphasis of the inspection was on what GDOT staff knows about the procedures they are suppose to follow for inspections and pollution prevention, and documentation that the procedures are being followed. EPA/EPD published a report with the audit findings and GDOT met with EPD to develop a corrective action plan to address the deficiencies. GDOT is required to report to EPD on compliance status.



Pollution Prevention plays a key role in MS4 Permit Compliance! Some key findings from the audit that impact your daily job include

1. Inspections and maintenance not being performed in accordance with Facilities Stormwater Pollution Prevention Plan (F-SWPPP) procedures.
2. Pollution prevention/good housekeeping practices not in accordance with Facilities Stormwater Pollution Prevention Plan (F-SWPPP) procedures.
3. MS4 structure maintenance needs to be better tracked, with completion timeframes documented
4. All staff should be made aware of pollution prevention and good housekeeping practices and/or procedures required by GDOT's F-SWPPP.

GDOT Georgia Department of Transportation

Corrective Actions from Previous Inspections were not Always Completed

This site was inspected in 2015. One of the corrective actions was "Protection should be provided to large inlet at Fuel Station from spills that could potentially occur there".

During the 2018 inspection, there was no inlet protection.

Complete corrective actions from site inspections or include a schedule in the site-specific SWPPP.

This is one example. It applies to all facilities.

Each year twenty-percent of GDOT facilities (about 35) are inspected for pollution prevention and good housekeeping practices. Any corrective actions identified need to be completed or scheduled for completion. This facility was inspected in 2015 and a corrective action was noted to provide inlet protection at this inlet from potential spills at the fuel station. EPA and EPD reviewed the 2015 inspection and noted that this corrective action had not been completed.

Procedures in the F-SWPPP should be followed. It's your responsibility to know what's in the F-SWPPP and maintain your site accordingly. A few material storage examples are shown here: Salt is considered an illicit discharge and is required to be covered/contained to keep it away from stormwater flows. Salt Barns should be kept closed and salt should not be tracked onto the adjacent pavement of mixed with rock

All stone stockpiles should be contained. In this example, stone was identified outside of the perimeter barrier and entering a drainage channel.

All stockpiled materials should be reviewed – some materials may need to be stored under cover. In this example oily waste materials were identified in an open stockpile.

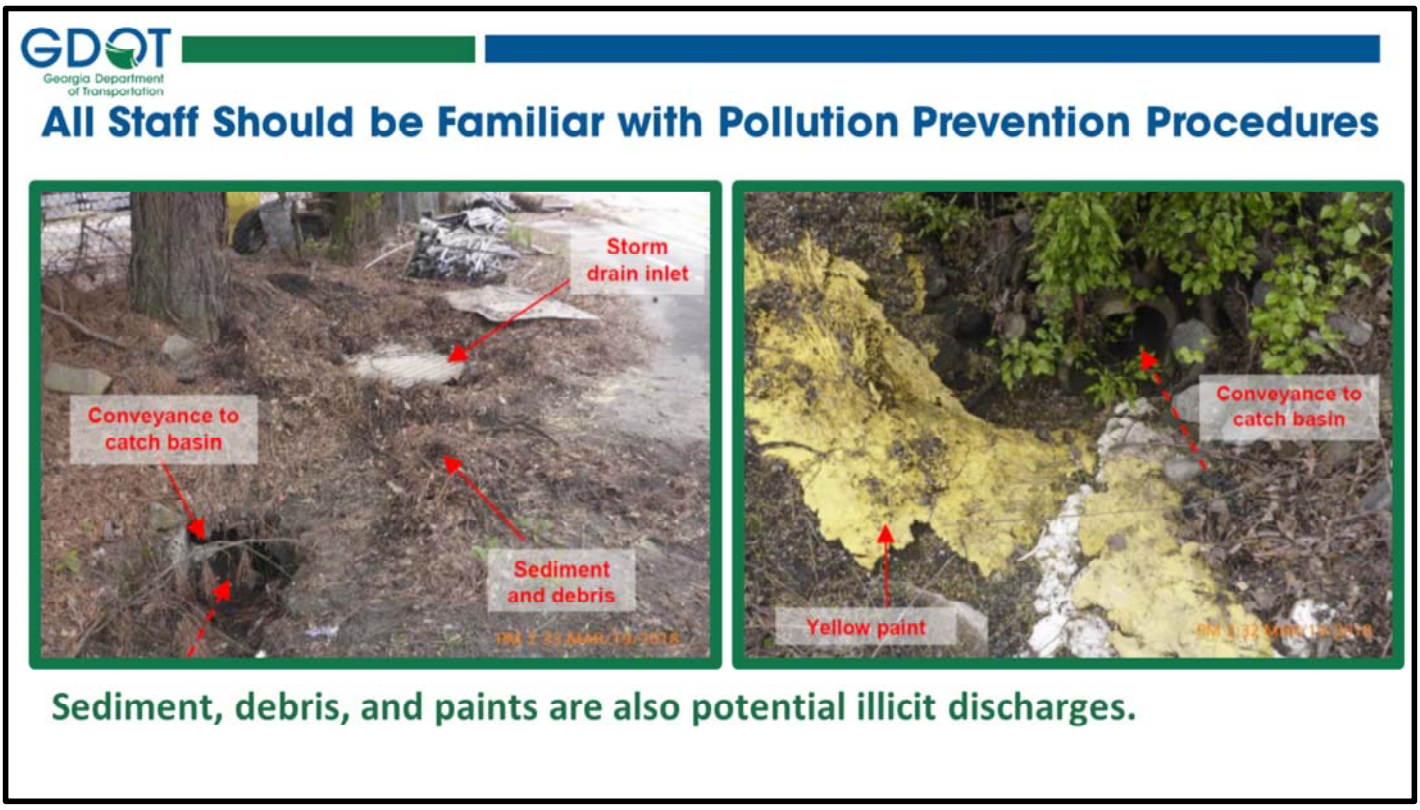
All Staff Should be Familiar with Pollution Prevention Procedures

Example: vehicle was being washed in front of the wash bay and wash water from the vehicle was observed entering a storm drain.

Vehicle wash water is an illicit discharge to the MS4.

All employees should be trained in the use of proper wash locations at each facility.

Vehicle wash water is considered an illicit discharge. For this example, a vehicle was being washed in front of the wash bay and wash water from the vehicle was observed entering a storm drain. All employees should be trained in the use of proper wash locations at each facility. This inlet has now been marked with a "do not dump , drains to stream" stencil.



Other training recommendations: Make staff aware of all potential sources of illicit discharges at your facility and make staff aware of the locations of all waterways and outfalls. Everyone is responsible for identifying and reporting any potential dumping to a catch basin, channel, or stream.

GDOT Georgia Department of Transportation

Audit Response – Corrective Action Plan

GDOT was required to create a Corrective Action Plan from the audit with deadlines for completion.

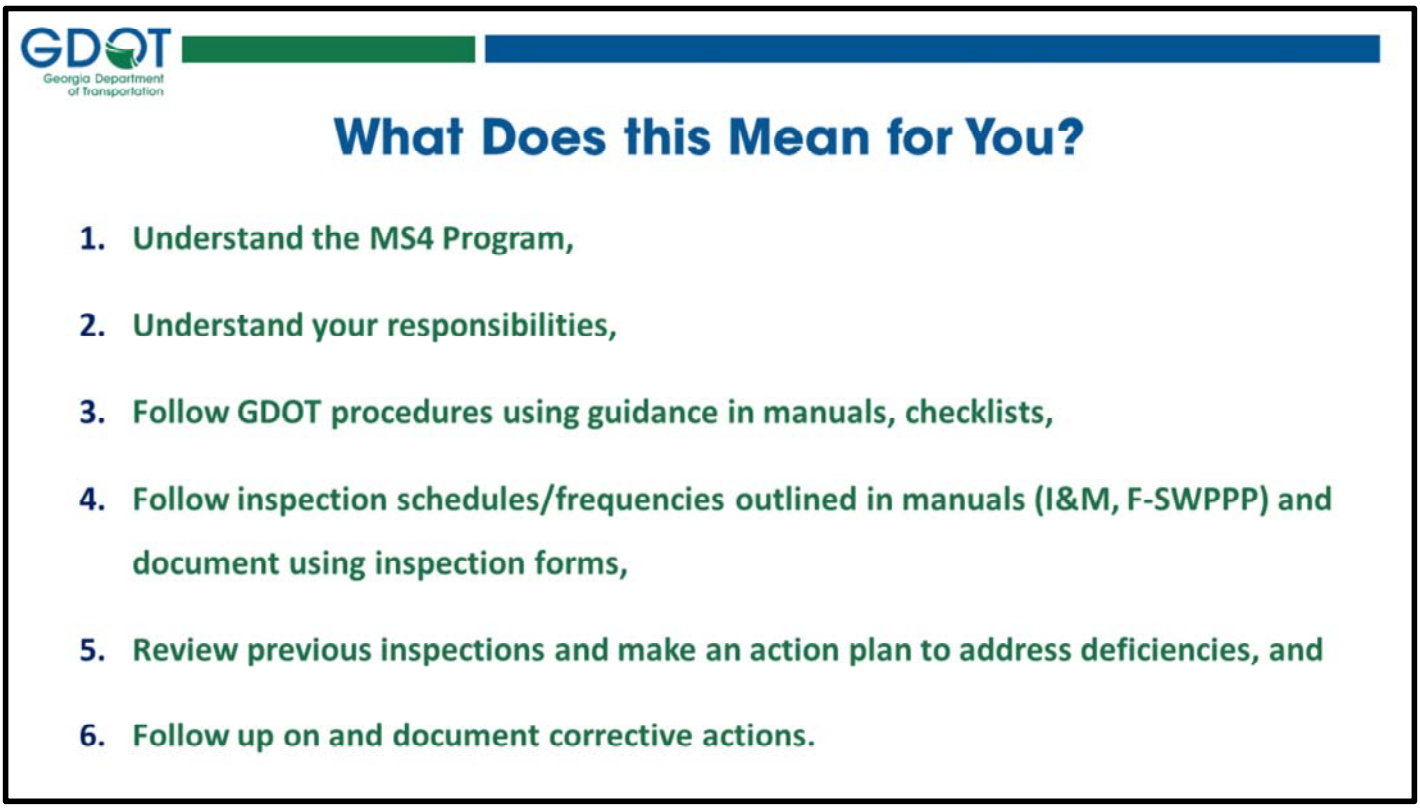
GDOT is required to report status updates to EPA and EPD.

There may be penalties for non-compliance.

EPA MS4 Inspection Corrective Action Plan

Permit Requirement	Observations	Response	Corrective Action Plan	Responsibility	Schedule
Permit Part 4.2.3 – Illicit Discharge Detection and Elimination	1. GDOT's GIS-based map incorrectly identified Adairsville, GA as part of GDOT's MS4 permitted area.	This has been corrected along with any other similar minor occurrences. The revised Permitted Area map was submitted to EPD on April 26, 2018. GDOT believes no further action is required and information provided in future Annual Reports will reflect this change.	None.	NA	Complete
	2. GDOT's GIS-based map identifies outfalls and structures that are not in the MS4 permitted area.	GDOT has revised its MS4 program boundary to match the Permitted Area boundary and believes no further action is required and information provided in future Annual Reports will reflect this change.	None.	NA	Complete
	3. GDOT's GIS-based map and inventory does not include an MS4 outfall in an area that had already been inventoried and mapped.	Upon review, this outfall was inventoried but was not displayed on the GIS-based map because the data was undergoing final processing by Arcadis prior to delivery to GDOT. It was, therefore, not included in the GIS-based map prepared for the EPA inspection. GDOT believes the inventory is comprehensive and that no further action is required. The information provided in future Annual Reports will reflect this change.	None.	NA	Complete
	4. During the Cobb Parkway IDDE site visit, GDOT and Arcadis representatives could not confirm that a stormwater conveyance that had been mapped as a water of the State was not an adjacent MS4	GDOT has reviewed the location of this conveyance (channel) and has determined that this is located within GDOT R/W and is not within the bounds of an adjacent MS4. However, the channel discharges to	Update Field Manual to provide further clarification for field staff to determine waters of the State. Complete in 2019 and provide status with the 2019 Annual	Design Policy & Support/Arcadis	Revise Field Manual by June 1, 2019 Status Update with Annual Report by March 31, 2019

As a follow-up to the audit, GDOT was required to develop and implement a Corrective Action Plan to respond to audit findings. GDOT must report progress on plan implementation to Georgia EPD and EPA. If GDOT does not properly implement this plan, they will be fined for non-compliance.



Was does this audit review mean to you? We need every GDOT employee to:

1. Understand the MS4 Program,
2. Understand your program responsibilities,
3. Follow GDOT procedures using guidance in manuals, checklists,
4. Follow inspection schedules/frequencies outlined in manuals (I&M, F-SWPPP), and document all inspections using the proper forms,
5. Review previous inspections and make an action plan to address deficiencies, and
6. Follow up on and document corrective actions.

Know what GDOT's MS4 program is and ask if you don't understand; Know what forms to use to document inspections and maintenance; "if it wasn't documented, it was not done".

Today’s training will help detail your responsibilities with the MS4 program and policy guidance and manuals that you should follow.

GDOT Georgia Department of Transportation

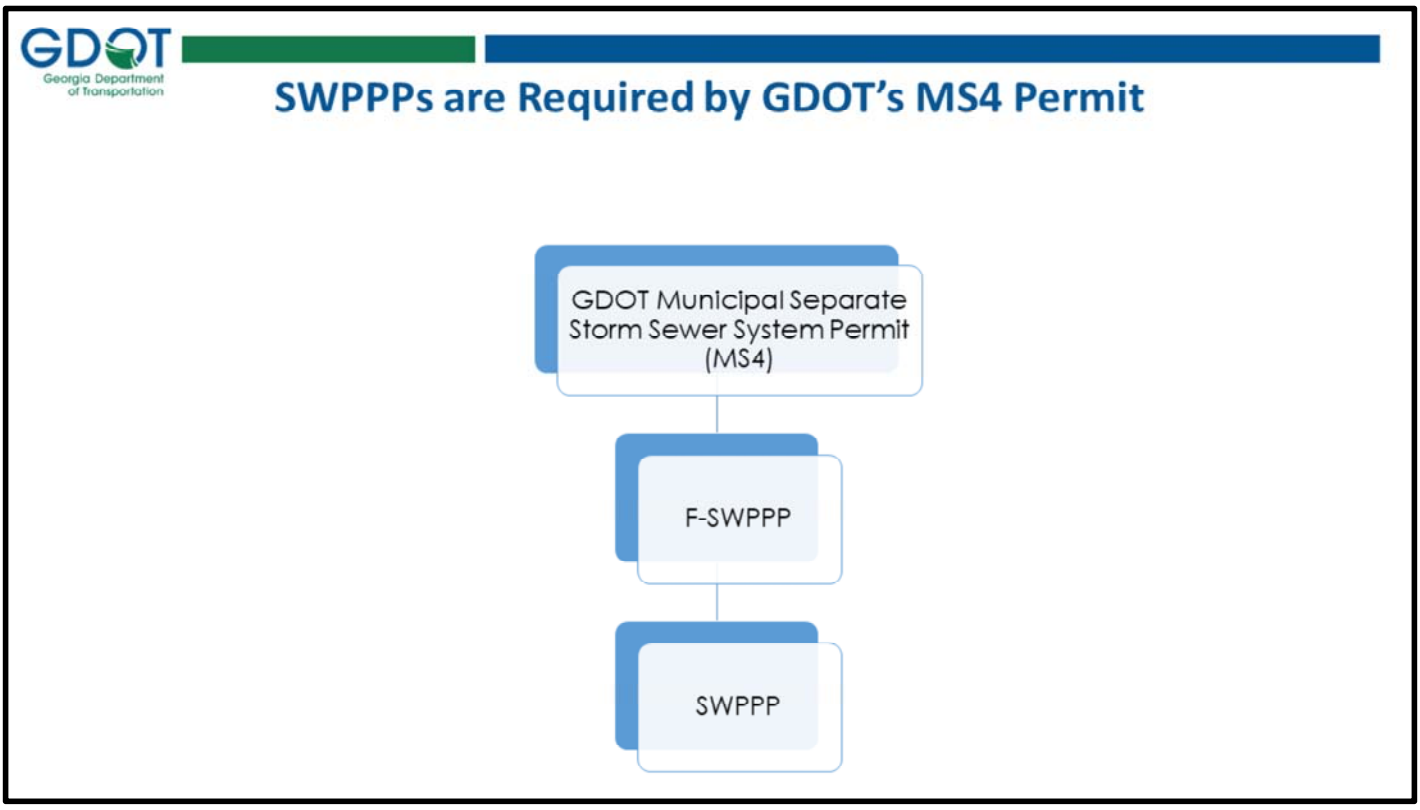
Facilities Stormwater Pollution Prevention Plan (F-SWPPP)

What is a SWPPP?

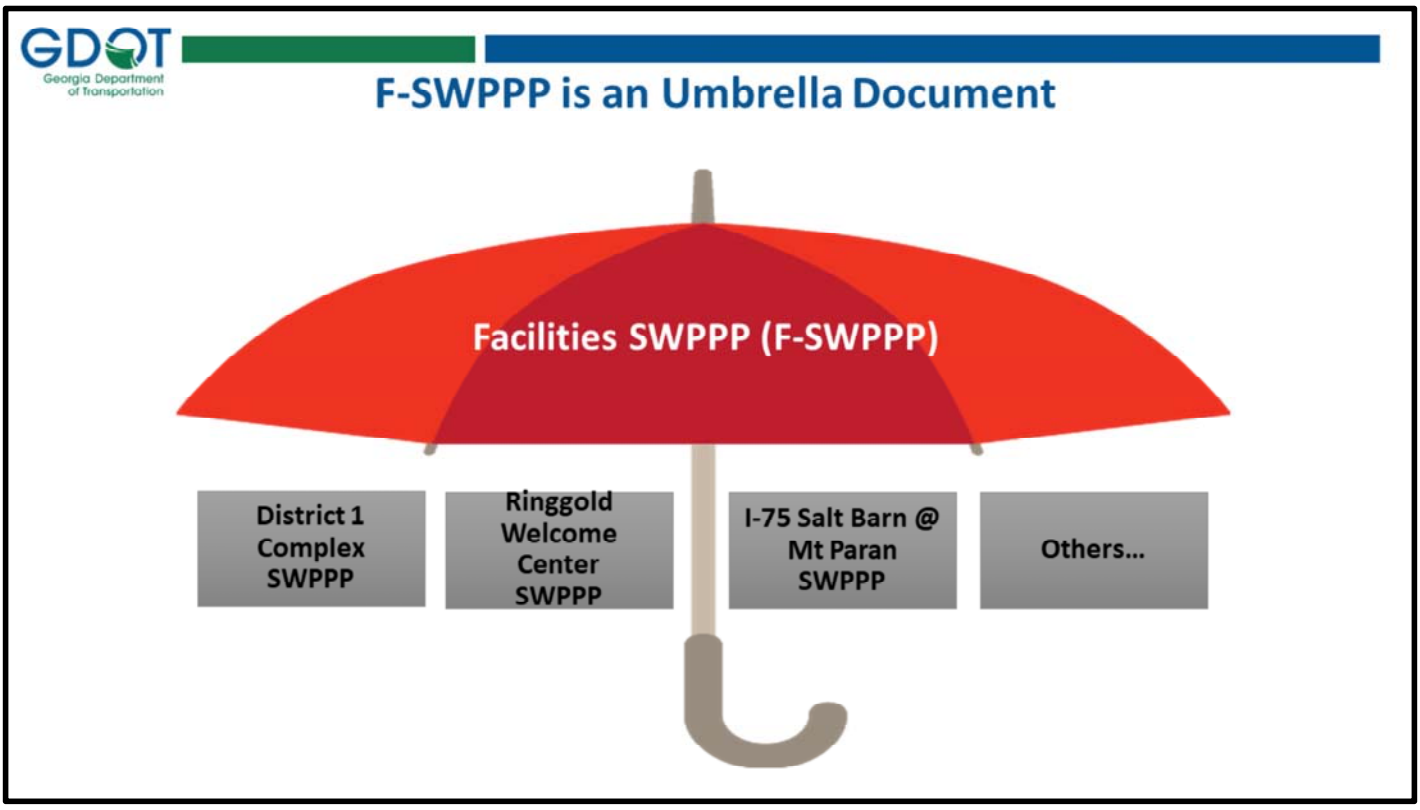
SWPPP – Stormwater Pollution Prevention Plan

A document that identifies all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from a site or facility.

A SWPPP is a written, site-specific plan that is used to guide facility operations to protect stormwater quality. A SWPPP presents a detailed description of the activities, materials, and practices at a site that have the potential to pollute stormwater, the specific control measures people will use to eliminate or reduce the potential for pollutants to impact stormwater at the site, and the personnel who are responsible for managing stormwater compliance.



To assist with the preparation of the SWPPPs, GDOT has developed a F-SWPPP document to provide direction and guidance to each of its facilities. The F-SWPPP helps each GDOT facility identify its pollution potential and the required control measures that are required.

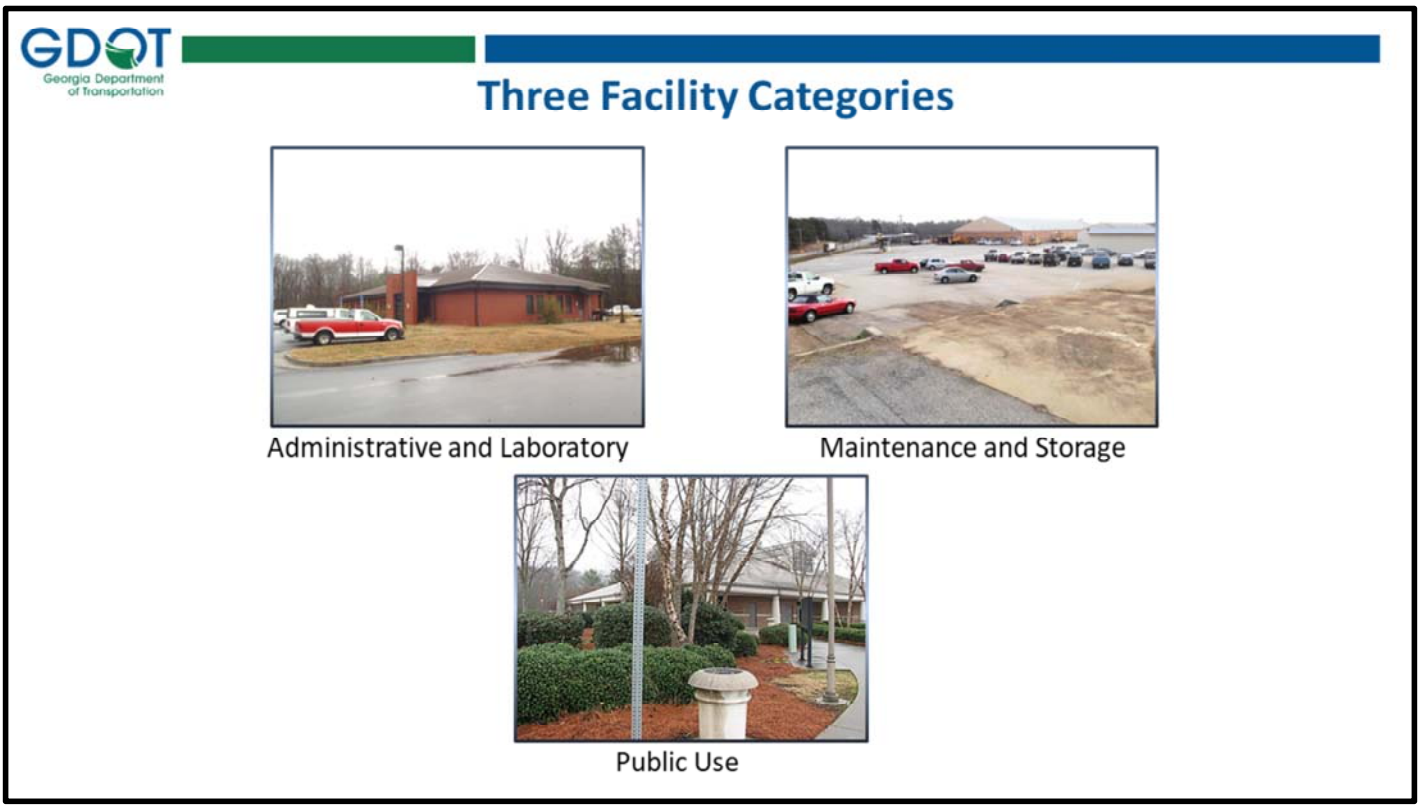


The F-SWPPP can be can be visualized as an “umbrella” document that discusses stormwater management practices at all GDOT facilities. The information contained in the F-SWPPP provides the basis for the preparation of the site-specific SWPPPs that are also required for each GDOT facility. It is important to know that the F-SWPPP and the SWPPP, while two separate documents, work together to meet GDOT’s stormwater compliance needs.

What GDOT Facilities Are Affected?

Facilities located in MS4 areas that store, handle, or generate materials that are stormwater pollutants and can potentially contaminate waters of the State.

GDOT facilities located in MS4 areas are required by law to comply with terms of the stormwater permit, the F-SWPPP and SWPPP documents. However, it is GDOT policy that **ALL** GDOT facilities implement stormwater pollution prevention practices as a **Best Management Practice**, or "BMP."



The F-SWPPP describes three general categories of GDOT facilities. For the purposes of stormwater compliance, each GDOT facility is classified as either:

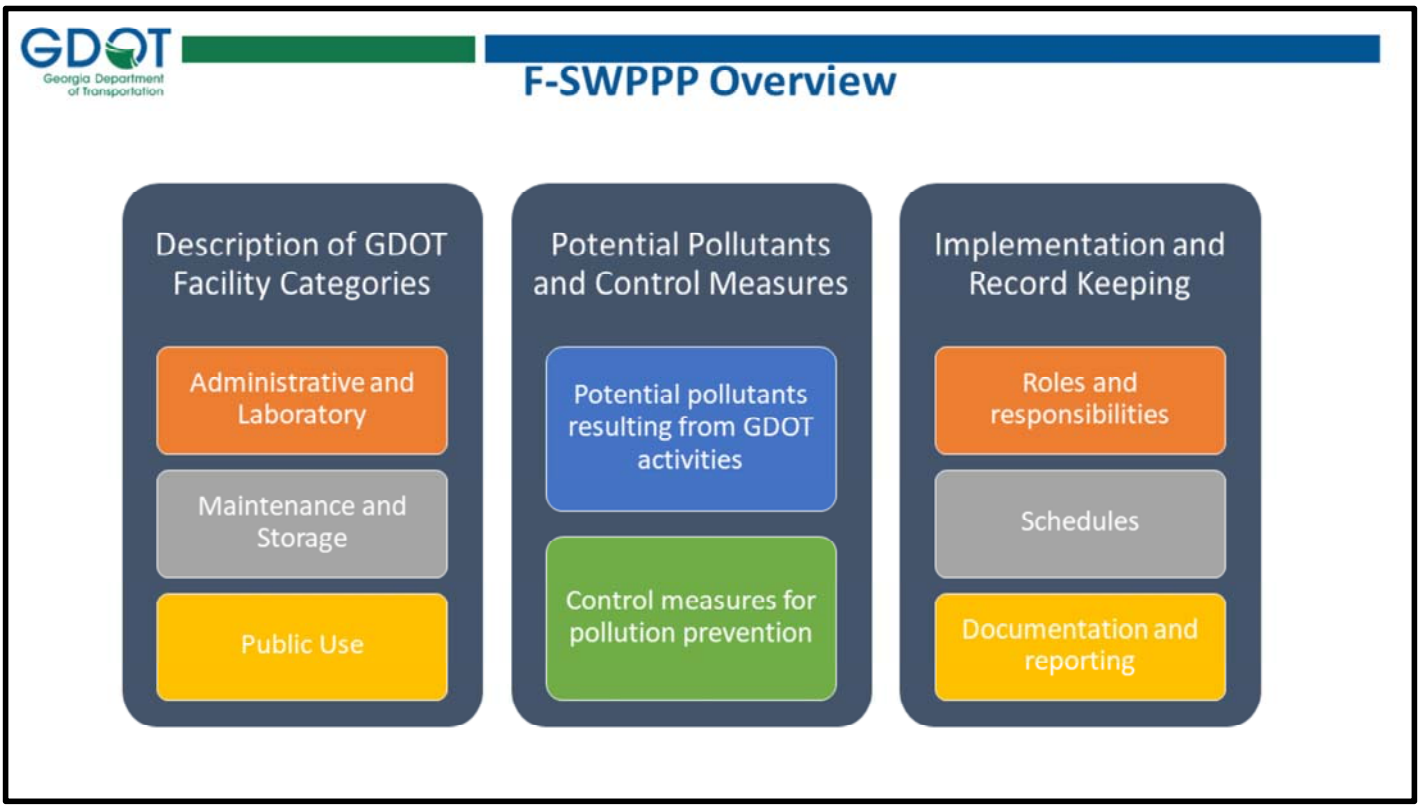
- Administrative and Laboratory,
- Maintenance and Storage, or
- Public Use

These facility categories are described on the following slides.

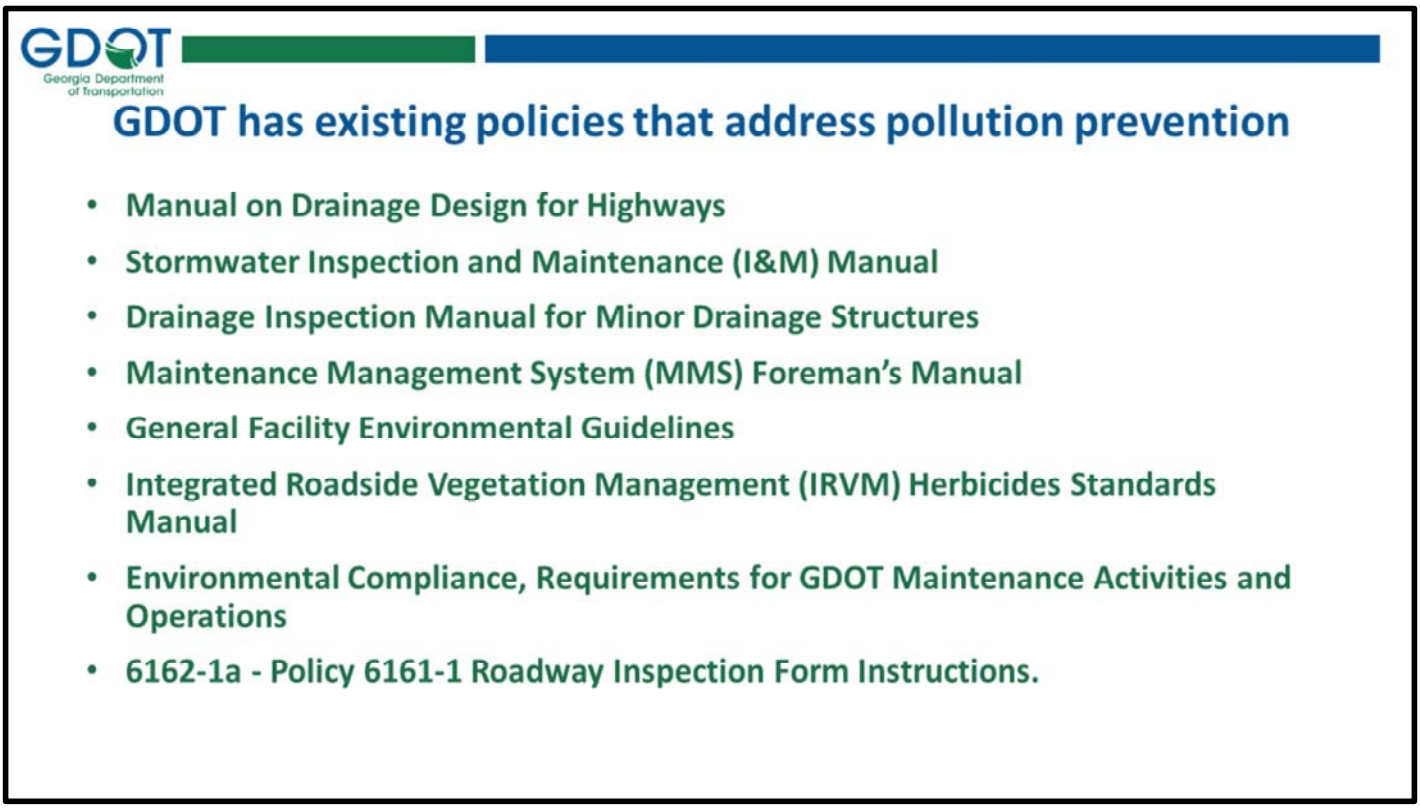
Administrative and Laboratory facilities generally have a low potential to impact stormwater quality. They include district offices, area offices, laboratories, bridge inspection offices, construction offices, and other management and administrative-related facilities.

Maintenance and Storage facilities have a high potential to impact stormwater quality. These include maintenance shops, maintenance headquarters, fueling stations, salt barns and brine storage, exposed storage yards, and similar type facilities.

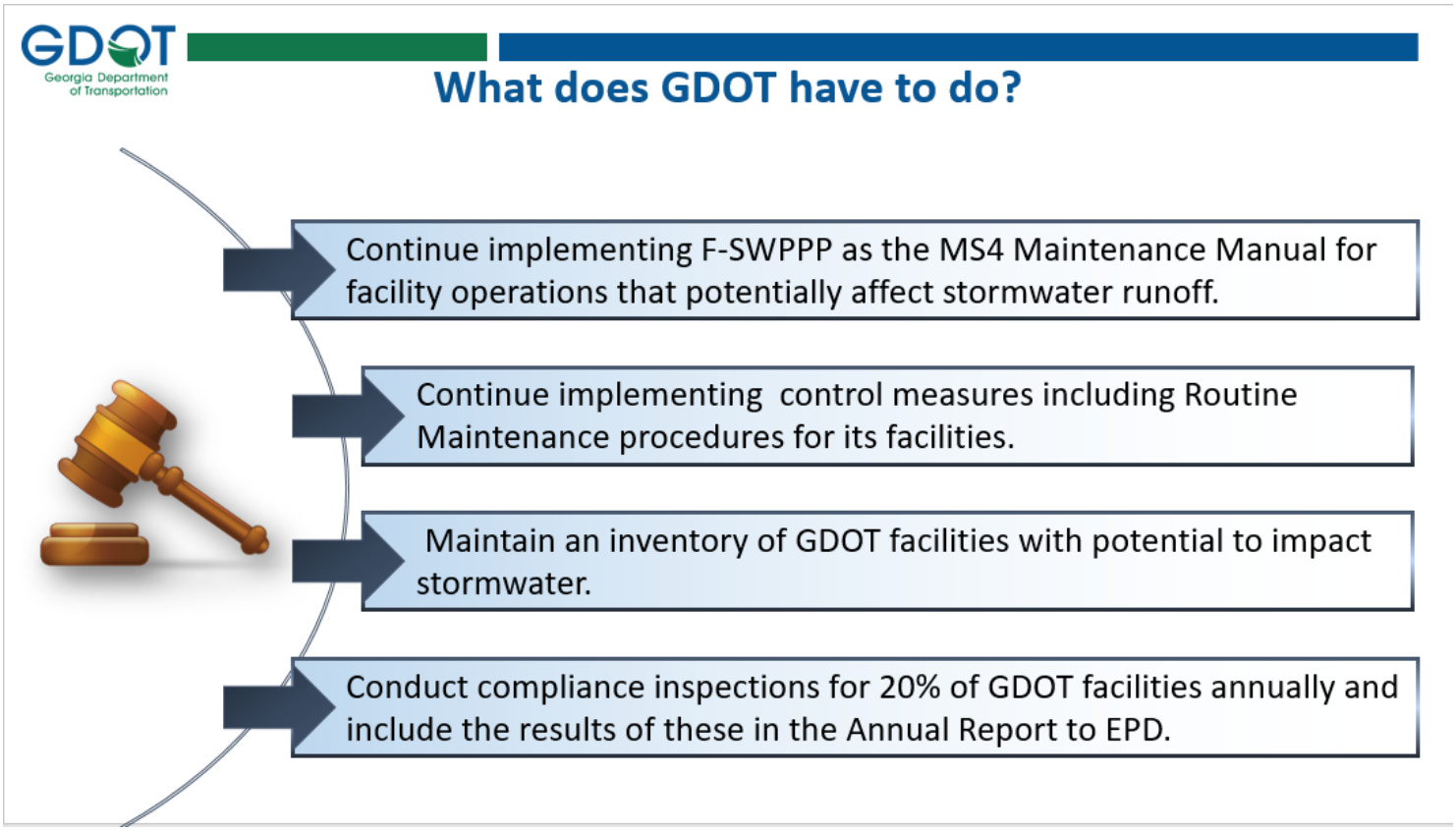
Public use facilities generally have a low-to-moderate potential to impact stormwater quality. They include welcome centers, rest areas, and park and ride lots.



Although each type of GDOT facility has a different potential to impact on stormwater quality, all GDOT facilities have some ability to pollute stormwater if they are not managed properly. The F-SWPPP clearly describes potential pollutants and control measures applicable to each type of GDOT facility, the overall process for implementation, and specific recordkeeping requirements.



Pollution prevention is not a new concept for GDOT. In fact, the F-SWPPP has adopted many pollution prevention practices that are already being used under several other GDOT programs. Therefore, the pollution prevention practices outlined in the F-SWPPP and SWPPP documents should be familiar to many GDOT employees and contractors.



We have already discussed some of the many obligations under its stormwater permit. Of key importance is that each GDOT facility located in an MS4 area must conduct a stormwater compliance inspection every five years. There are approximately 157 GDOT facilities located in MS4 areas, so about 40 facilities must be inspected annually to meet the inspection requirement. These inspections are completed by GDOT personnel, or GDOT-representatives.

What does this mean to YOU?

- Review and understand your facilities SWPPP
- Verify procedures are being properly implemented
- Conduct or participate in routine inspections and perform resulting maintenance
- Attend MS4 related training and present what you have learned to your staff and crews
- Document activities and keep records for all of the above (GAMs, Inspection Form E, Appendix B of SWPPP)
- Report to District Environmental Compliance Specialist

As a GDOT employee or contractor, you are an important part of GDOT's protection of stormwater quality. You are expected to have a general awareness of stormwater pollution prevention concepts, follow GDOT policies and procedures regarding stormwater management, attend relevant training, generate and maintain requisite documentation (if appropriate), and to notify the Environmental Compliance Specialist (ECS) of your stormwater quality issues or concerns.

Review Questions and Discussion

1 What is the purpose of the Clean Water Act?

A. Identify suitable sources of drinking water

B. Protect water quality by reducing the discharge of pollutants to waters of the State

C. Limit groundwater withdrawals from a facility

D. Prevent stormwater runoff from a facility

Review Questions and Discussion

2 What is an MS4?

A. Municipal Segregated Sewer Service

B. Multipurpose Sewer and Storm System

C. Municipal Separate Storm Sewer System

D. Major Sized Storm Sewer System

Review Questions and Discussion

3 What is required of GDOT as an MS4 permittee?

A. Educating Employees

B. Post-Construction Stormwater Management

C. Pollution Prevention

D. All of the above

Review Questions and Discussion

4 Which categories of GDOT facilities are regulated?

A. Administrative and Laboratory

B. Maintenance and Storage

C. Public Use

Review Questions and Discussion

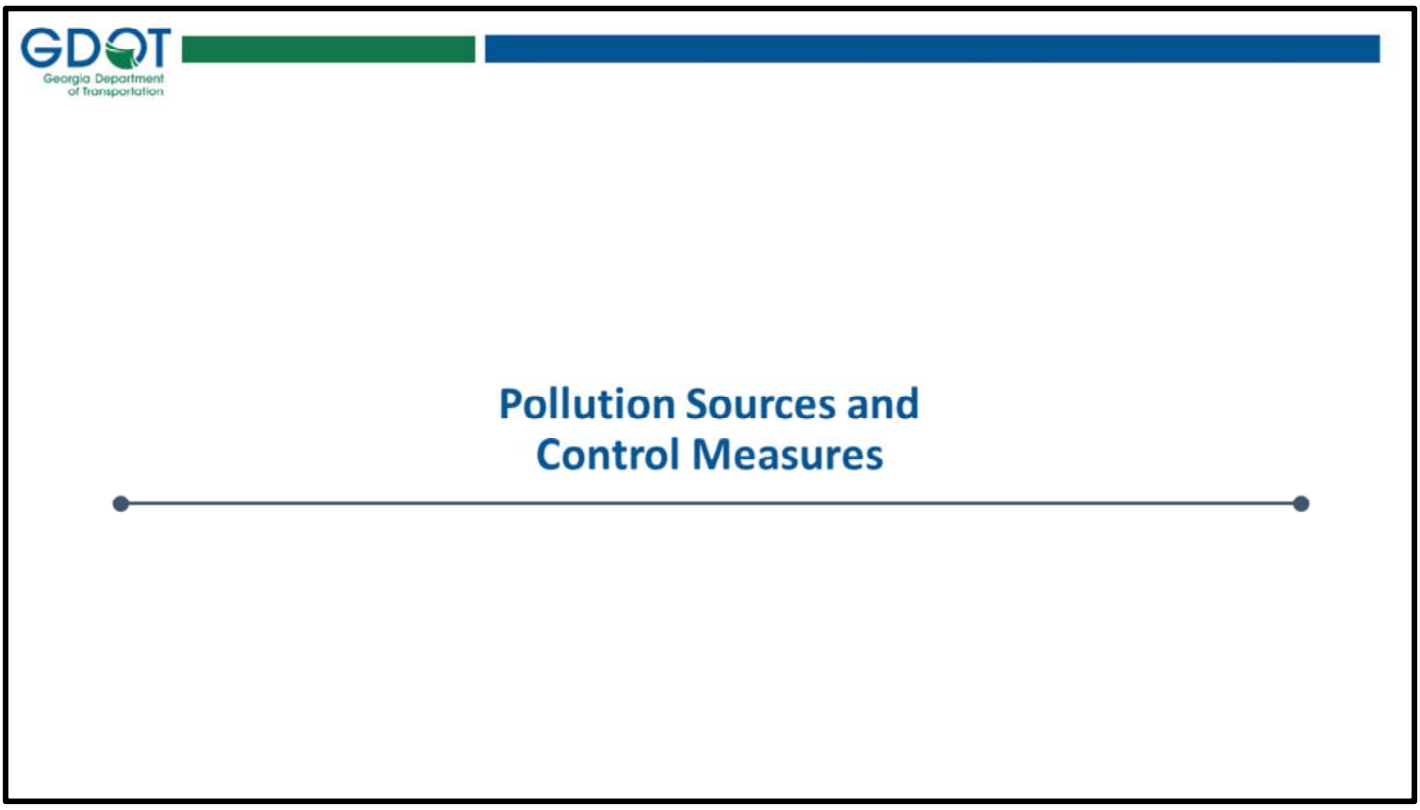
5 What is a F-SWPPP and SWPPP?

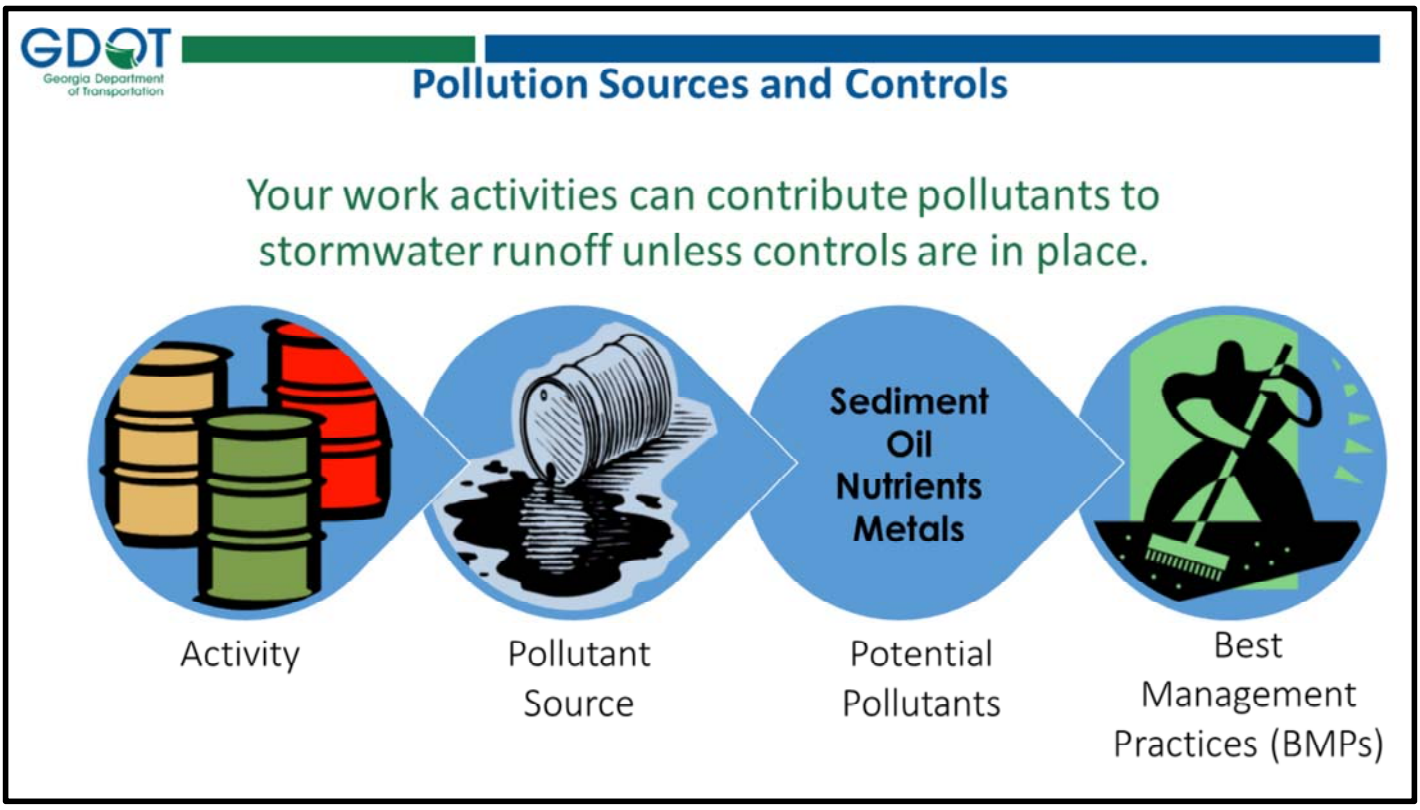
A. Facilities Stormwater Pollution Prevention Plan & Stormwater Pollution Prevention Plan

B. Functional Sewer Pollution Prevention Plan & Sewer Pollution Prevention Plan

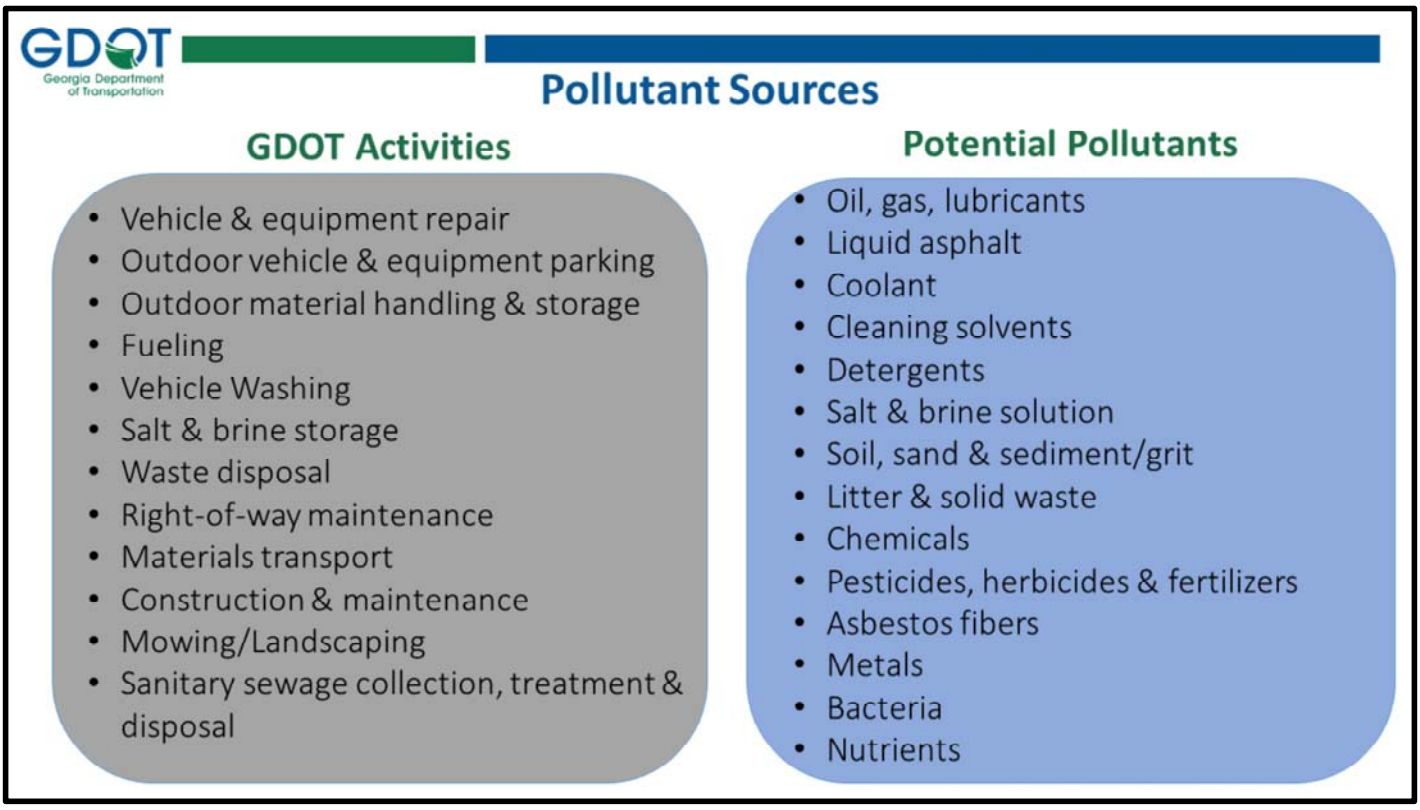
C. Featured Sanitary Pollution Preparation Plan & Sewer Pollution Prevention Plan

D. Functional Stormwater Pollution Prevention Plan & Stormwater Pollution Prevention Plan


GDOT
Georgia Department of Transportation
Pollution Sources and Control Measures



GDOT-related activities involve sources of pollution that can impact our environment. Only after understanding the potential pollutants associated with GDOT activities and sources, BMPs can be used to eliminate or reduce environmental impacts.

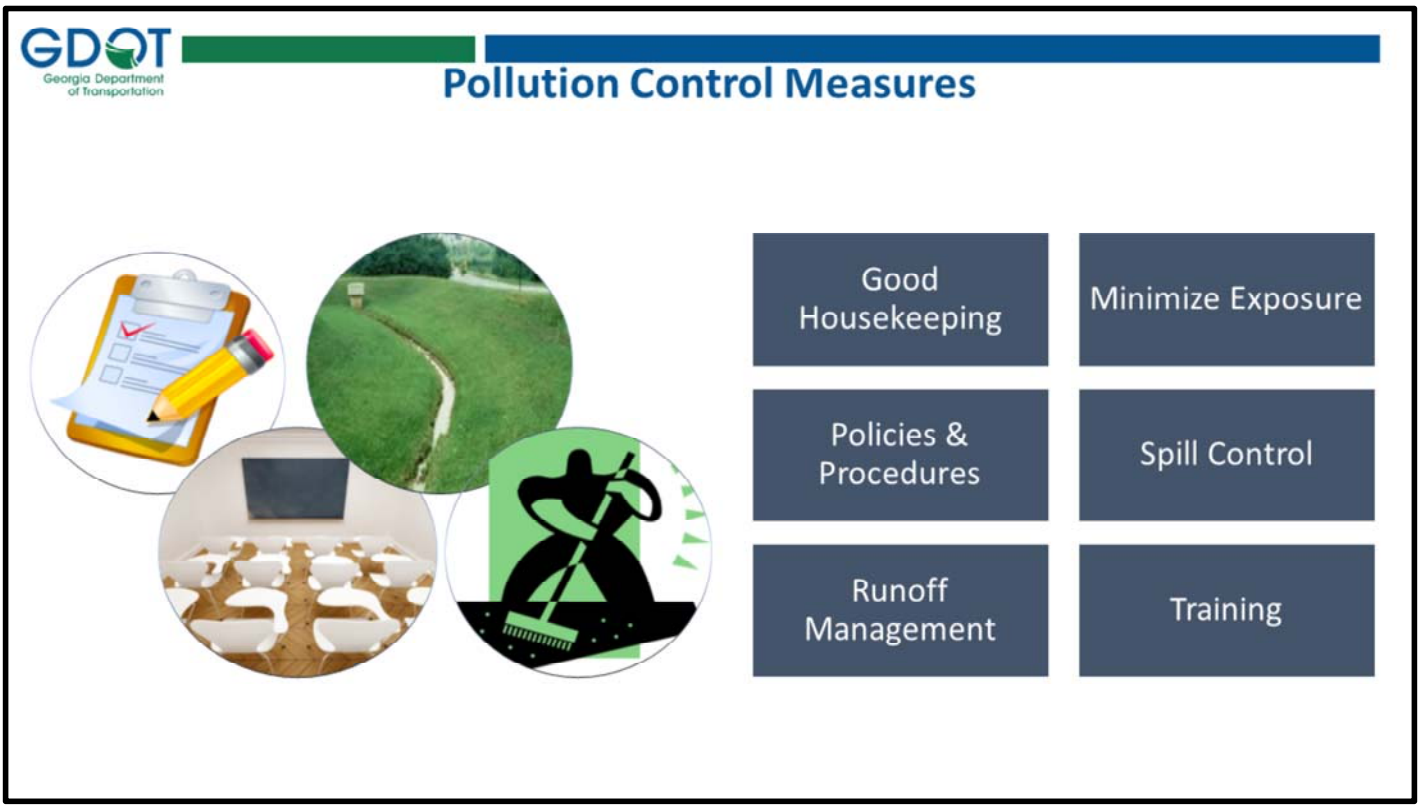


Review the above lists of GDOT Activities and Potential Pollutants. As you can see, there are many GDOT activities that can generate pollutants, and there are a variety of potential pollutants of concern. Pollutants include chemicals like automotive fluids, cleaning agents, and pesticides; but also include general litter, bacteria, nutrients, and metals. Even natural soil, sand, sediment, and grit can become stormwater pollutants if not properly managed.

Pollutant Sources (What causes pollution?)

- Spills and leaks
- Over application of sand, salt, fertilizer, or herbicide
- Grass and vegetation clippings
- Litter, trash, garbage and road kill
- Airborne deposition
- Erosion of bare soil
- Overflows or leaks from septic tanks, sanitary sewers or septic system leach field

Pollutant sources are only a problem when they are uncontrolled and allowed to be released into the environment. Sources can release pollutants to the environment in many ways including spills and leaks, erosion, overflows, and mismanagement or neglect. Grass and vegetation can also be a pollutant source when mismanaged. For examples: grass clippings and vegetative debris can cause blockages in pipes. Additionally, when they grass clippings travel to a stream they carry an excess load of nutrients that can be harmful to stream habitat.



Control measures help eliminate or reduce the potential for pollutant sources to impact the environment. There are six general classifications of control measures: good housekeeping, policies and procedures, runoff management, minimizing exposure, spill control, and personnel training. When you understand the concepts of these six control measures, you will hold the knowledge to protect the quality of stormwater flowing from your facility. The following slides detail each of these key control measures and provides examples.

Good Housekeeping

- Keep work areas, storage areas, and public facilities clean and orderly
- Comply with facility regulatory requirements
- Regularly inspect or patrol facility and follow preventative maintenance schedules

Good housekeeping is essential to stormwater compliance. It is also the easiest to implement. "A place for everything, and everything in its place" is an easy way to think about housekeeping; however, good housekeeping also requires personal accountability and adherence to work policies and procedures.

Housekeeping can be assessed during formal inspections. But the act of inspecting doesn't always mean walking around with a clipboard and form. You can conduct informal visual inspections anytime during your daily activities. If problem areas are identified, they can be brought to the attention of the responsible party for quick attention.

Good Housekeeping

- Promptly clean up spills of oils, chemicals, and other materials
- Store materials and equipment indoors when possible
- Know the BMPs established for your facility type

Common good housekeeping practices include prompt cleanup of spills, storing materials indoors when possible, and ensuring the BMPs for your facility are maintained and functioning as intended.

Housekeeping Example 1

Control Measure:
Workers place drip pan and absorbent to contain fuel leaks from vehicle.

Here is an example of a good housekeeping Control Measure. After equipment inspection identified a leak from a fuel truck, a drip pan and absorbent mat were placed to contain the fuel leak and eliminate its impact to the environment. If absorbent clay is used on paved surfaces, be sure to remove and dispose of it properly. Lastly, ensure Maintenance is notified of the problem so that the leak can be repaired.

Housekeeping Example 2

Activity: Wastes are not placed in trash or dumpster and sediment is freely entering the storm drain.

Control Measure: Pick up litter and place in appropriate receptacle. Talk to your ECS and District Maintenance Manager about potential solutions to protect the drain from sediment.

Accumulations of litter and solid waste on the ground are examples of poor housekeeping. Stormwater that comes in contact with litter and solid waste can pick up pollutants and transport them to surface water. Good housekeeping consists of picking up litter and placing it in an appropriate receptacle for proper disposal.

Housekeeping Example 3

Activity: Outdoor storage of scrap and waste materials creates a source of stormwater pollution. Scrap parts can be sources of oils/grease, sediment, and metals

Control Measure: Cover outdoor waste collection areas when possible, wash parts, ensure no leaking of pollutants, and establish appropriate disposal cycles.

Equipment is likely to have residual oil, grease, lubricant, etc. so you could potentially have a pool of oily water in the dumpster. If the dumpster leaks, that's oily water entering the storm system. In this photograph, scrap metal has been allowed to over-accumulate in an uncovered dumpster. Exposure to rain allows pollutants to leach from the container and contaminate stormwater runoff. In this example, good housekeeping practices would include the use of a covers or lid on storage containers and establishing a suitable frequency of waste removal to prevent lengthy accumulation.

Housekeeping Example 4

Activity: A stocked spill kit is available at fueling area; however, the source of spills/leaks has not been repaired or corrected.

Control Measure: Find and fix the source of these leaks.

In this example, the operator of this fueling station has provided a spill kit and has used absorbent materials to contain spills and leaks; however, because the source of the spills/leaks has not been repaired and this is an ongoing stormwater pollution problem. Good housekeeping practices require that problems are reported so that appropriate repairs can be performed.

Housekeeping Example 5

Control Measure: Keep containers in a covered storage area. This will keep the containers dry and away from any possible runoff that could possibly contaminate the ground or nearby streams.

Here is an example of good housekeeping Control Measure. Pesticide containers are kept on pallets in a dry area under a roof and the surrounding area has been swept clean.

Housekeeping Example 6

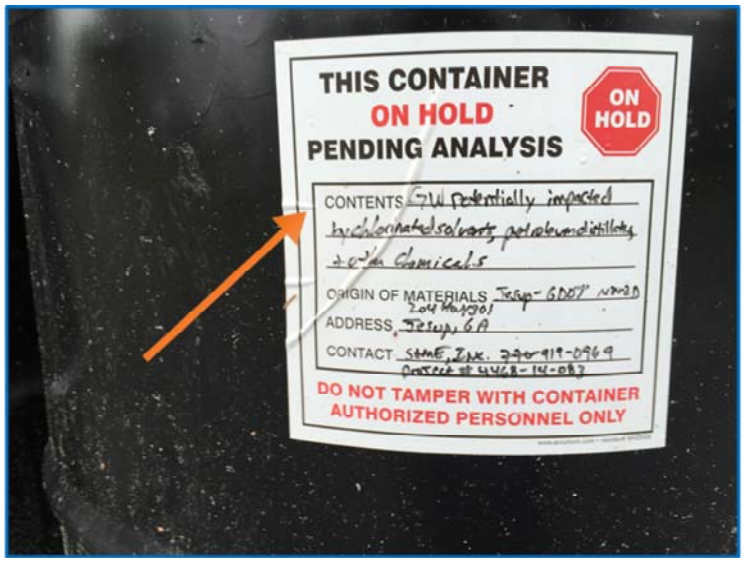
Activity: Packaging has broken leaving materials exposed to rain and creating a source of stormwater pollution.

Control Measure: Keep material out of the weather when possible, promptly remove broken or damaged packaging, and clean up spilled material.

This picture shows broken and deteriorated packaging of thermoplastic. The material is exposed to precipitation and can be picked up by stormwater runoff. In this example, good housekeeping practices would involve informal inspections to identify the problem, reporting the problem for attention, and the timely removal of broken or damaged packaging and spilled material. Additionally, the materials might be moved to indoor storage to avoid spillage and facilitate cleanup if necessary.

Housekeeping Example 7

Control Measure: Workers label containers with their contents, origin of materials, address, and contact person.



Good housekeeping may be as simple as ensuring that all chemical and material containers are appropriately identified by marking and labeling. Labels and marking inform people what is in the container, if there are any hazards associated with the stored material, and how long the material has been stored. Many containers are required to be labeled by law. For example, used oil containers need to be labeled “Used Oil” and chemicals must be labeled in accordance with OSHA hazard communication requirements.

Minimize Exposure

- Cover outdoor loading and unloading areas, if possible
- Use "dry" cleanup measures
- Use erosion and sediment controls

The second key concept of pollution prevention is **Minimizing Exposure**. Minimizing exposure reduces the potential for pollutant sources such as those from GDOT activities, equipment, and materials , to come into physical contact with stormwater. By preventing stormwater contact with pollutant sources, the potential for stormwater contamination is significantly reduced, if not entirely eliminated. Actions to minimize exposure can include removing sources of pollutants from the site, moving pollutant sources indoors, reducing the size or volume of pollutant sources, or placing pollutant sources under protective shelter.

Minimize Exposure

- Perform cleaning or washing activity indoors, if possible
- Cover outdoor containers or dumpsters
- Use leak proof containers

Control measures used to minimize exposure include performing cleaning or washing indoors, covering outdoor containers and waste receptacles, and using leak-proof containers. This photograph shows an example where protective shelter has been used to minimize exposure of store field equipment, supplies and materials, and protect them from contact with stormwater. If using a weatherproof tarp, know that they are typically short-term corrective action, and may not be a long term solution.

Minimize Exposure

- Store materials and equipment under cover when possible
- Promptly clean up spills of oils, chemicals, materials
- Know the BMPs established for your facility type

This photo shows vehicles being parked under cover. This is good for minimizing exposure to stormwater; however, recognize that stormwater can still flow under the cover. Therefore, it is also important to promptly clean up spills of oil, chemicals or materials which may exist on the ground beneath the cover.

Minimize Exposure Example 1

Activity: Salt has escaped the barn during loading/unloading operations. Salt curtains do not appear to offer sufficient closure of the barn.

Control Measure: Use salt curtains and clean up salt.

This photograph shows an example where poor housekeeping practices have resulted in materials (salt) becoming exposed to stormwater. There also appears to be more salt stored that the structure needs to contain. Note too the poor condition of the curtain which does not appear to provide sufficient protection from stormwater, and that salt has been allowed to accumulate on the pad outside the barn. The loader is properly parked under cover.

Minimize Exposure Example 2

Control Measure: Salt curtains are being utilized, salt is contained inside the barn. The area is kept clean.

This photograph shows a good practice to minimize exposure of salt piles at salt barns. Note that the pad outside the barn is free of material, the curtain is in good condition, closed, and secured with sandbags.

Minimize Exposure Example 3

Control Measure: Trucks are parked under cover.

This roof structure for parked equipment minimizes stormwater contact and helps protect surface water quality.

Minimize Exposure Example 4

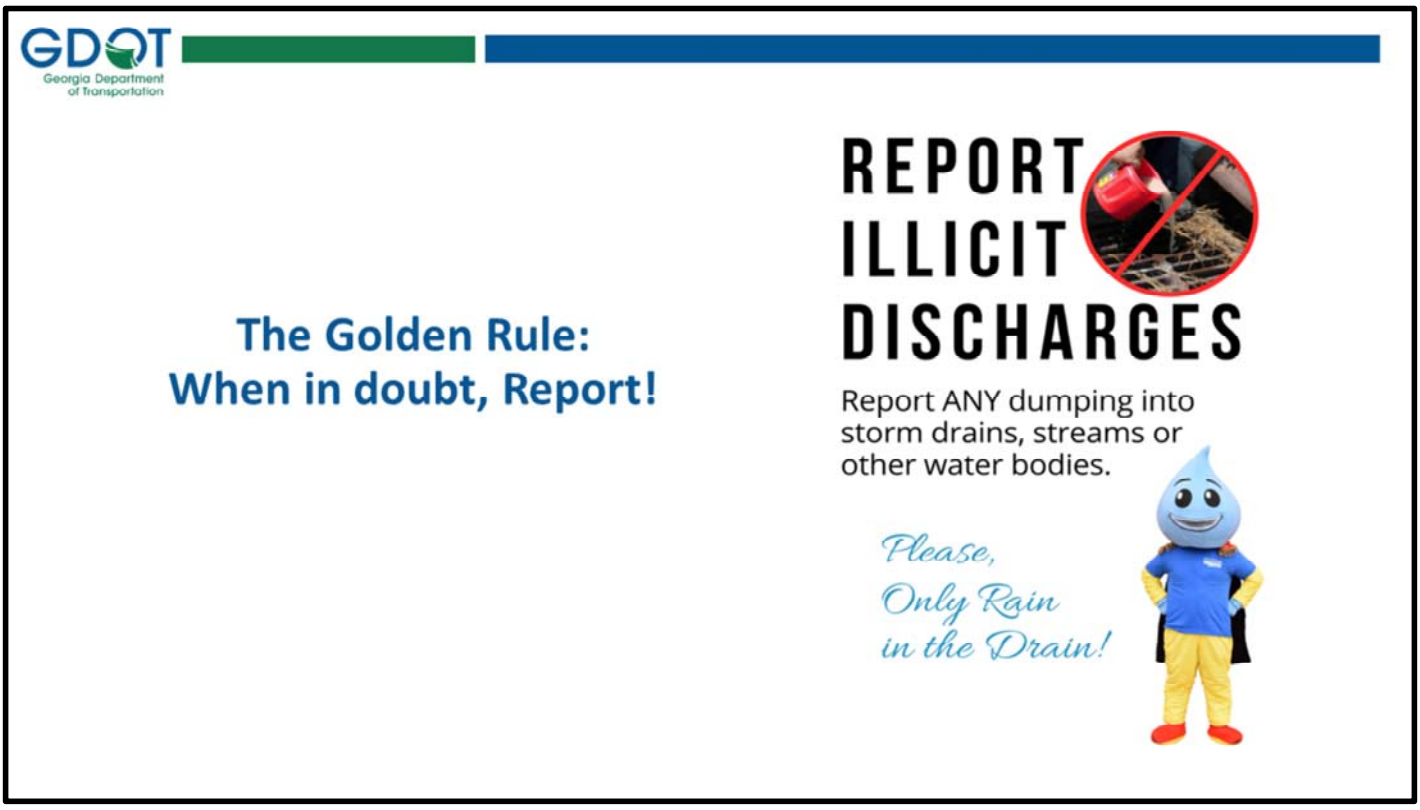
Activity: Rusted, eroded drums and totes are stored uncovered in a loading dock area in standing liquid.

Control Measure: Dispose of drums and determine if the standing liquid has been contaminated. Clean up liquid with absorbents and properly dispose. Move the totes to the covered area, if possible.

In this example, bad housekeeping practice has exposed chemical containers to stormwater. Leaks and spills from the containers have released chemicals to the ground where they are available to contact stormwater and impact surface water. Minimizing exposure in this example includes disposing of empty/waste containers, cleanup, and proper disposal of free liquids and affected surfaces. Chemical containers should be stored inside or under cover to prevent weathering and minimize exposure to stormwater.

Illicit discharges can also result in inhibited growth of plants and animals in and around the water body. The unexplained appearance of dead and decaying plants, fish, and other aquatic species can be a sign of surface water pollution; however, seasonal conditions and weather events can also cause similar abnormal conditions.

Illegal dumpings are a source of illicit discharges that may be encountered along drainage areas, roadways, and rights-of-way. Oftentimes, illegally discarded wastes contain hazardous substances and residues which create stormwater pollutants when they come into contact with rainwater. Some illegally dumped waste can be transported by wind and end up in surface waters or drainage areas.



GDOT is required to investigate and assess all illicit discharges that occur on GDOT-owned property or otherwise affect its MS4. Whether you are a GDOT employee or a contractor representing GDOT, it is essential that you report illicit discharge activity soon after discovery. If your observations leave you in doubt as to whether an illicit discharge has actually occurred or may not be worth reporting, report the incident anyway so that trained personnel can be assigned to investigate the matter further.

Reporting Suspected Illicit Discharges

Report suspected illicit discharges within 24 hours; report spills immediately!

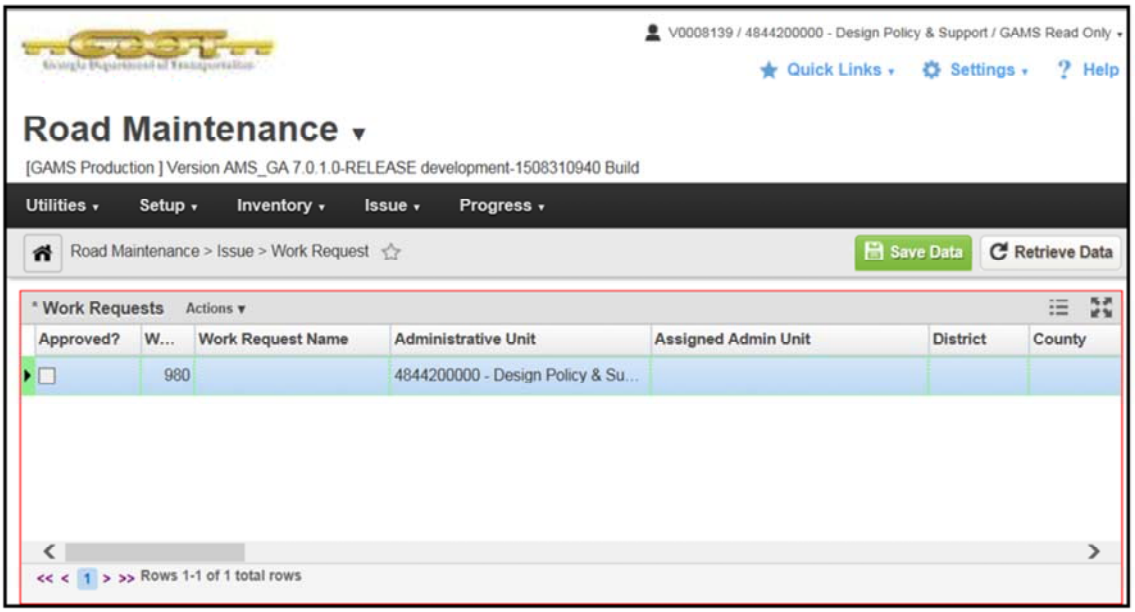
All reports must be documented, consider:

- What did you see and how much?
- Color, sediment, algae, estimated amount, etc.
- Where did you see it?
- What mile marker/address? Which side of the road?
- Are there any landmarks nearby?
- When did you see it?
- What day did you see it? Has it rained in the last 3 days?

GDOT requires that illicit discharges be reported within 24 hours. Reporting is easy. When reporting an illicit discharge to GDOT, be prepared to provide general information about what you observed (color, odor, characteristics), where and when you saw the discharge, and an estimate of the amount or size of the discharge. Provide any other unique or important information and detail that will allow a GDOT investigator to locate and assess the discharge after your report.

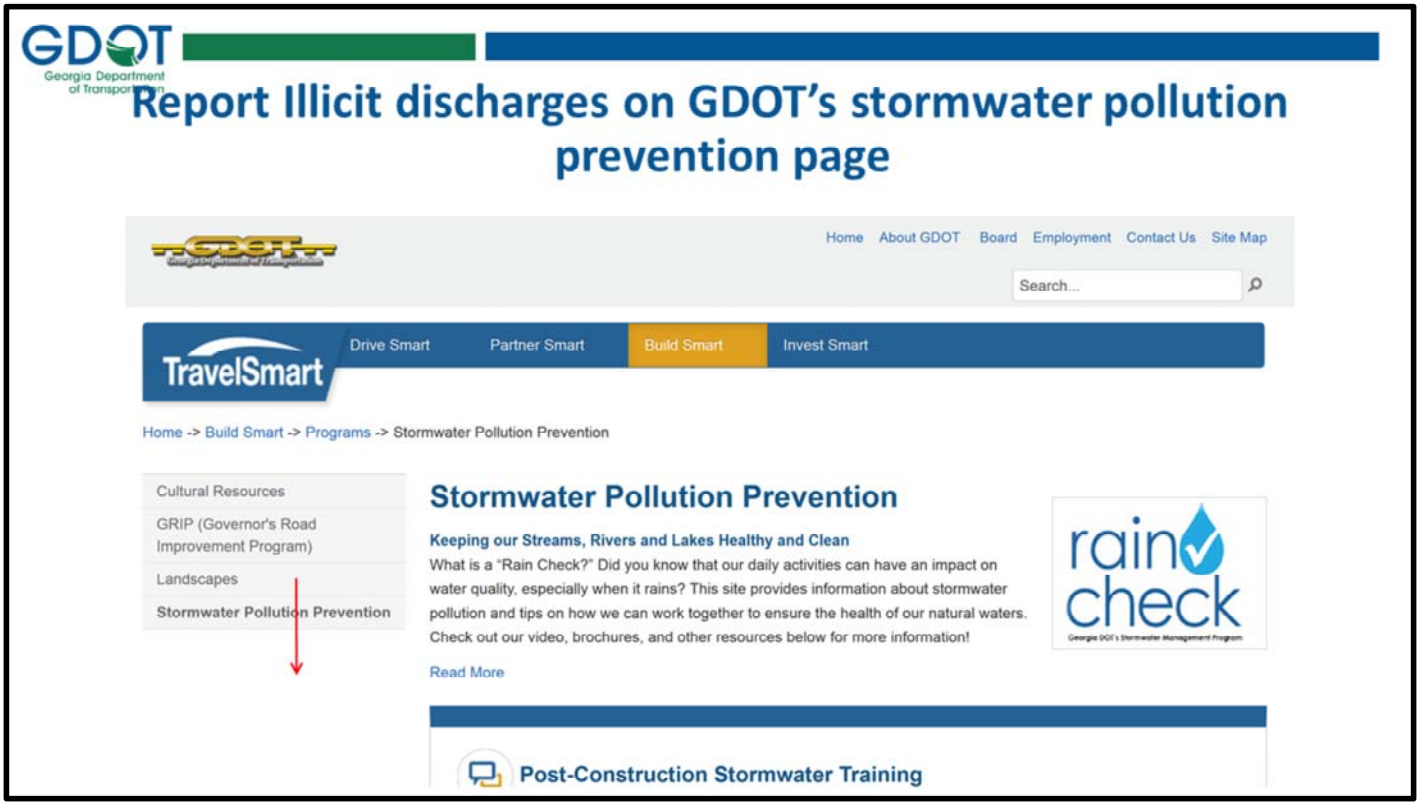
There are two ways which GDOT staff can report suspected illicit discharges. Reporting should be directed to the District ECS, or online in GAMS.

Reporting Suspected Illicit Discharges

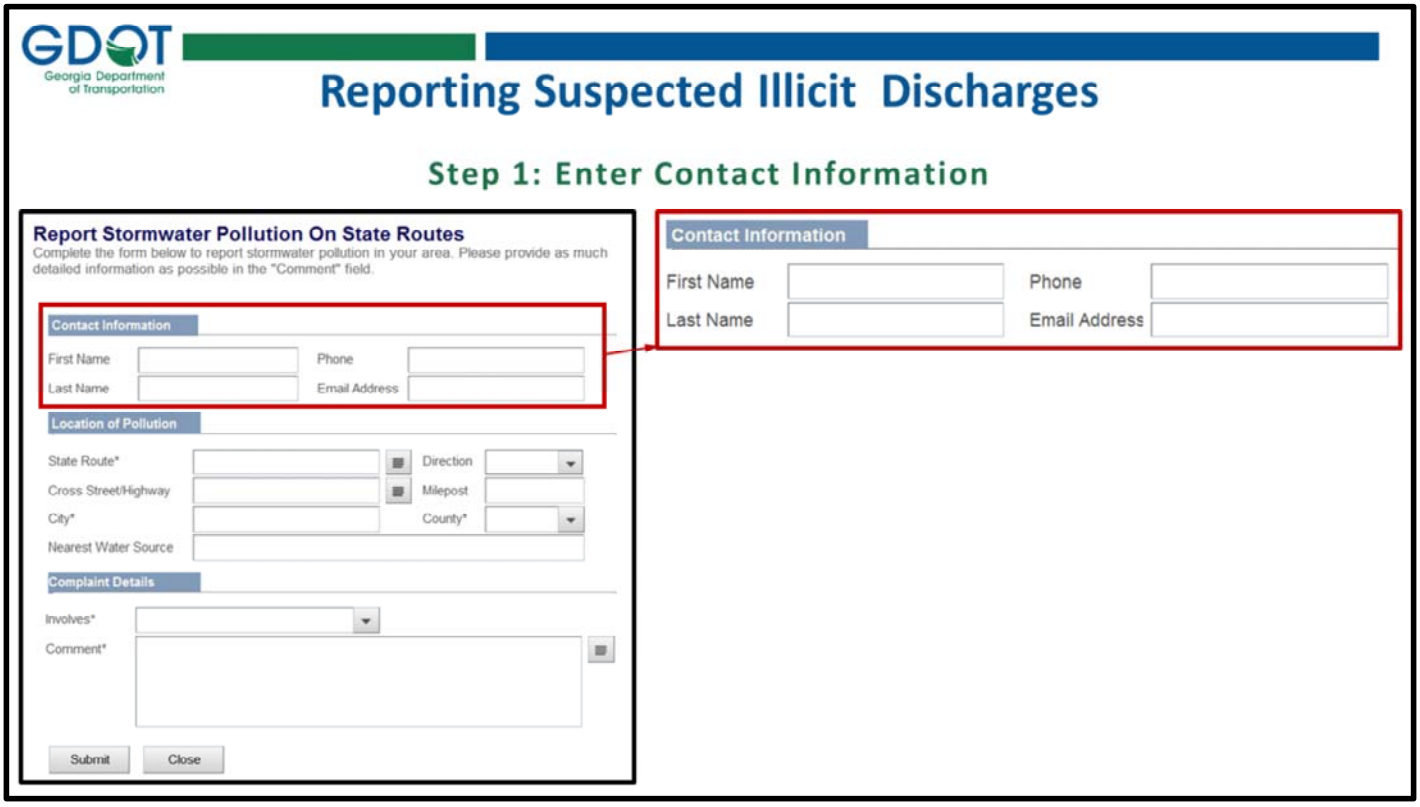


If reporting an illicit discharge in GAMs, file the report as a work request.

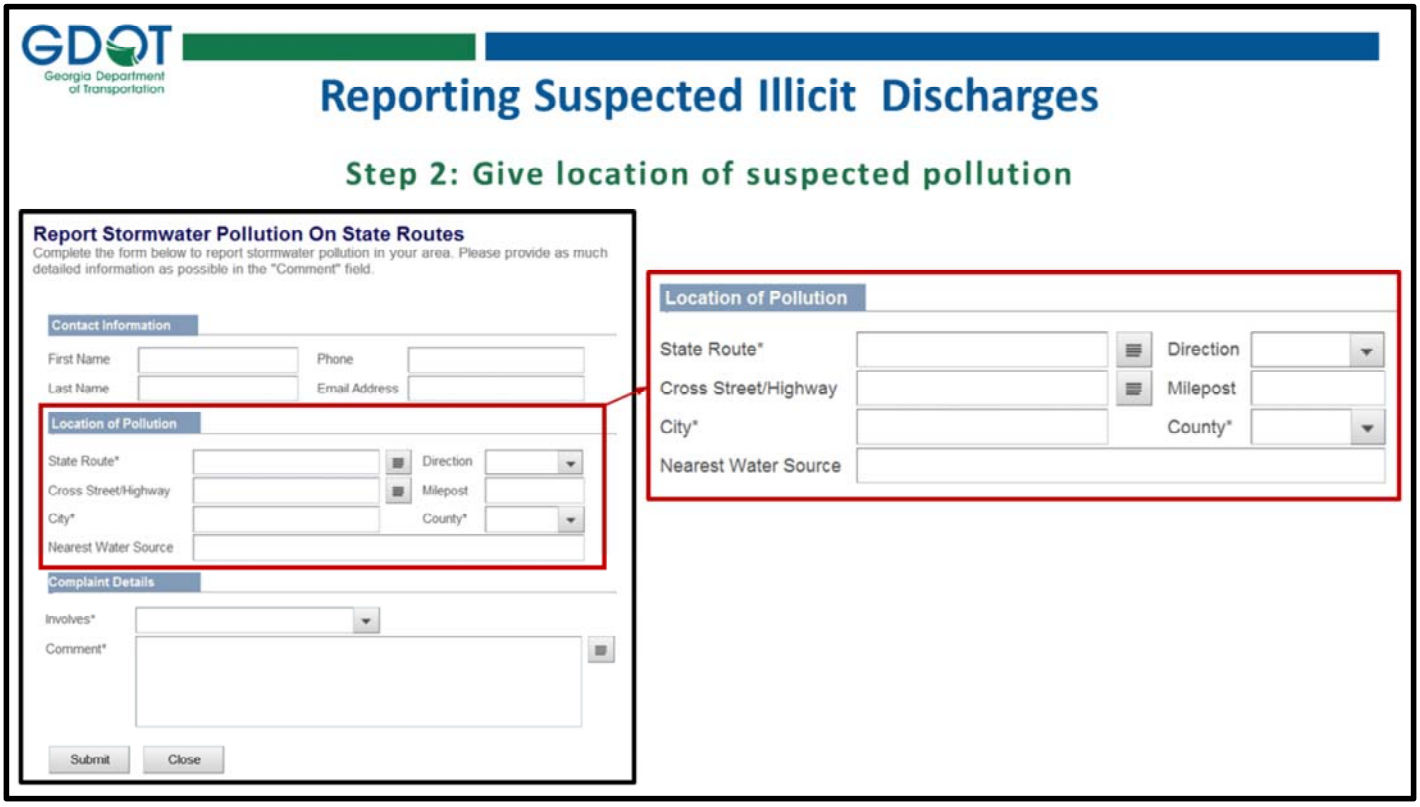
The general public can also report observations of suspected illicit discharges to GDOT. An illicit discharge reporting form is provided on the GDOT stormwater website.



When reporting an illicit discharge using the GDOT stormwater webpage, scroll to the bottom of the Stormwater Pollution Prevention page to find the form "Report Stormwater Pollution". Reporting on the GDOT website is a three-step process.

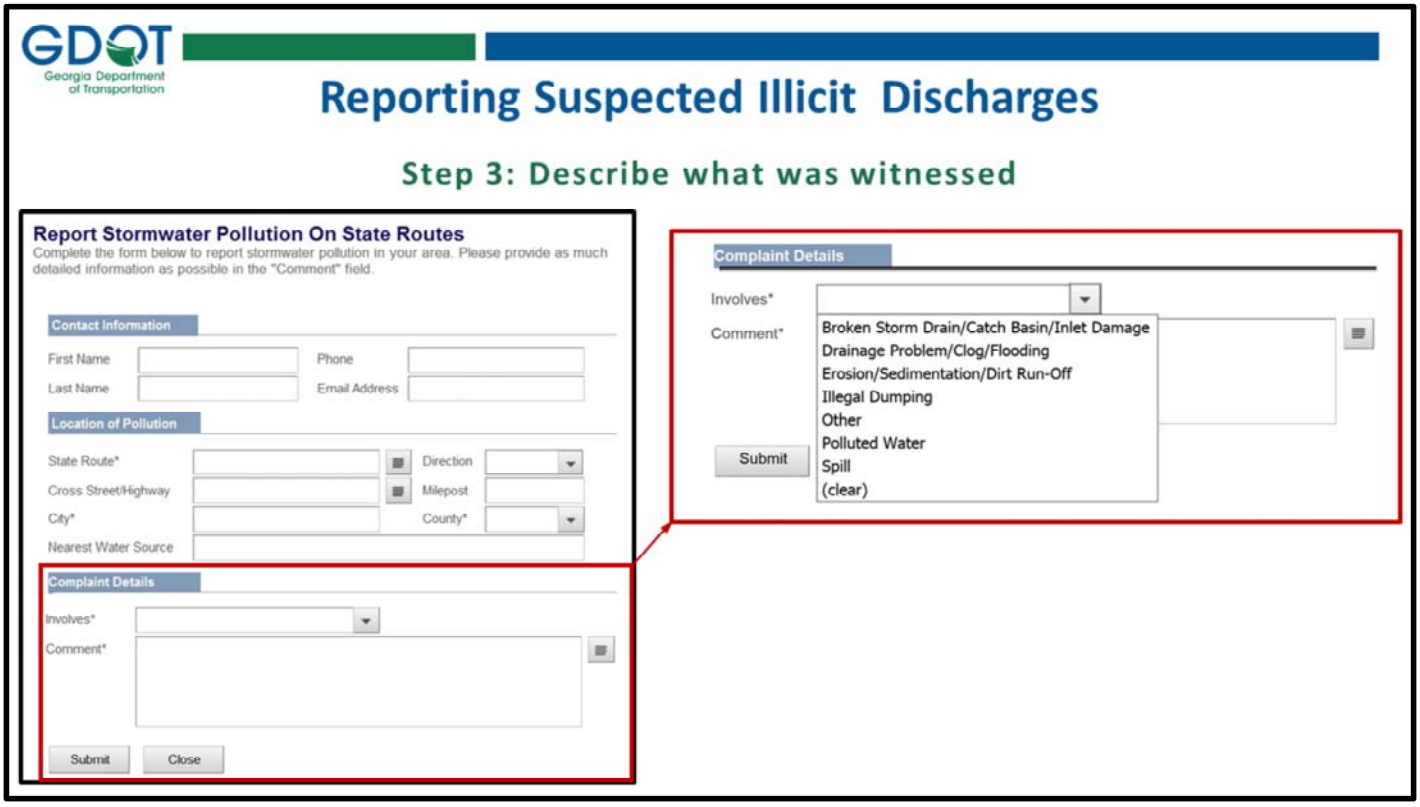


The first step in reporting a suspected illicit discharge is to provide your full first and last name, along with your phone number, and email address. While only the items that have an asterisk are required; it is important to complete the form as thoroughly as possible in order for the suspected illicit discharge to be located quickly.



The second step is to provide the location of the suspect illicit discharge on the Report Stormwater Pollution form. The following data entry fields address the location information:

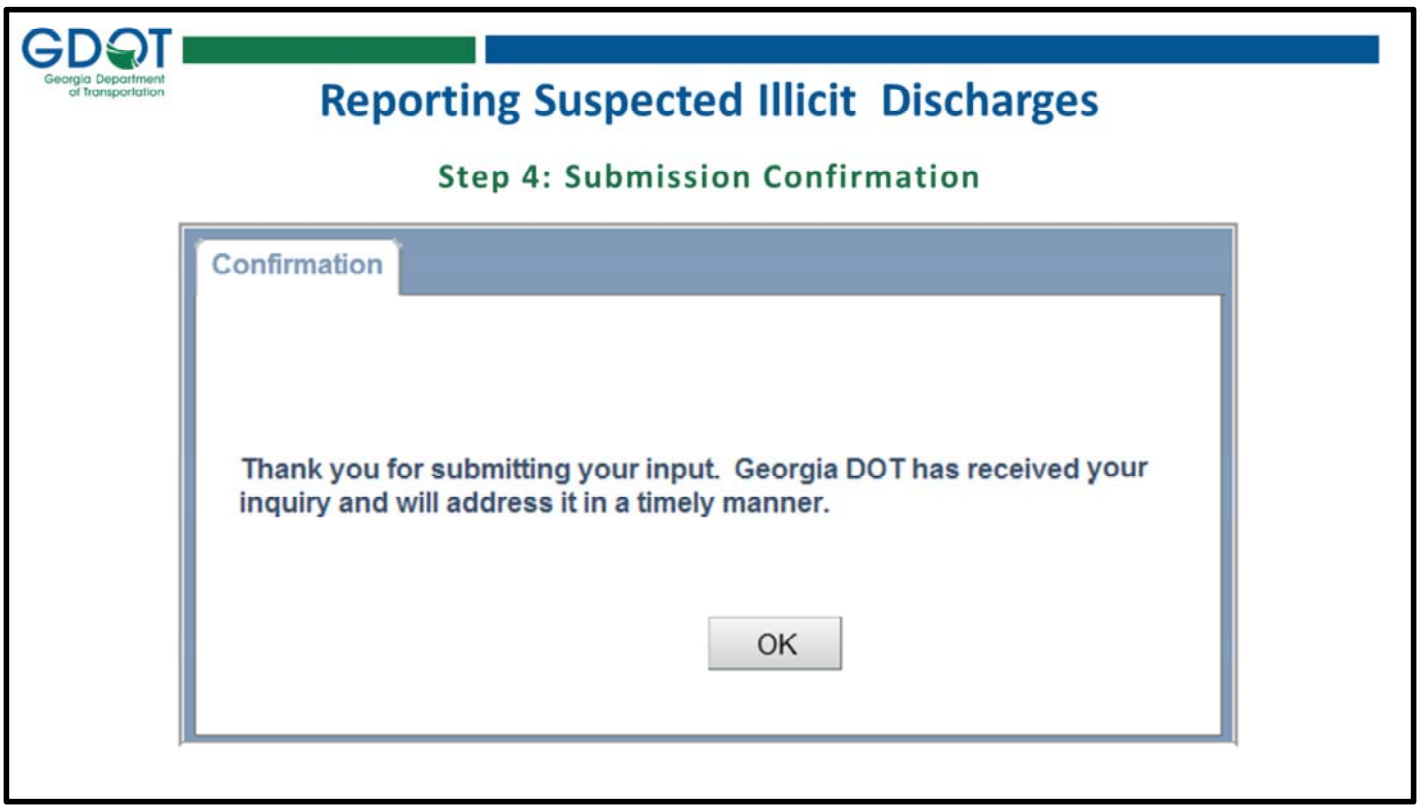
State Route: List the road you were on or near when you witnessed the suspected illicit discharge
Direction: Use the pull-down menu to select the direction the discharge is from the road
Cross Street/Highway: List the nearest cross road in order to help pinpoint the suspected illicit discharge location
Milepost: write in nearest milepost number (if any)
City: List the nearest town or city
County: Use the pull-down menu to select the county
Nearest Water Source: Write in the nearest known stream, river, lake, etc.



The third step on the Report Stormwater Pollution form is to provide details about what was observed. Enter the following information and use drop-down menus where provided:

Involves: To the best of your knowledge, choose what you believe to be the source of the pollution from the pull-down menu.
Comment: Describe the signs of illicit discharge you saw, including any combination dry-flow, color, odor, turbidity, presence of floatables, deposits, and biological indicators. Include everything you observed in this box. Also include more information about the location of the suspected illicit discharge. For example, list a nearby landmarks or home addresses.

Once the form is completely filled out, select “Submit”. The form will be saved and routed to GDOT stormwater pollution prevention staff for investigation.



The above message will appear to confirm that you have successfully submitted your report of a suspected illicit discharge. Shortly thereafter, you will receive a carbon copy of the email that was forwarded to GDOT personnel for follow-up.

GDOT Georgia Department of Transportation

Questions on IDDE?

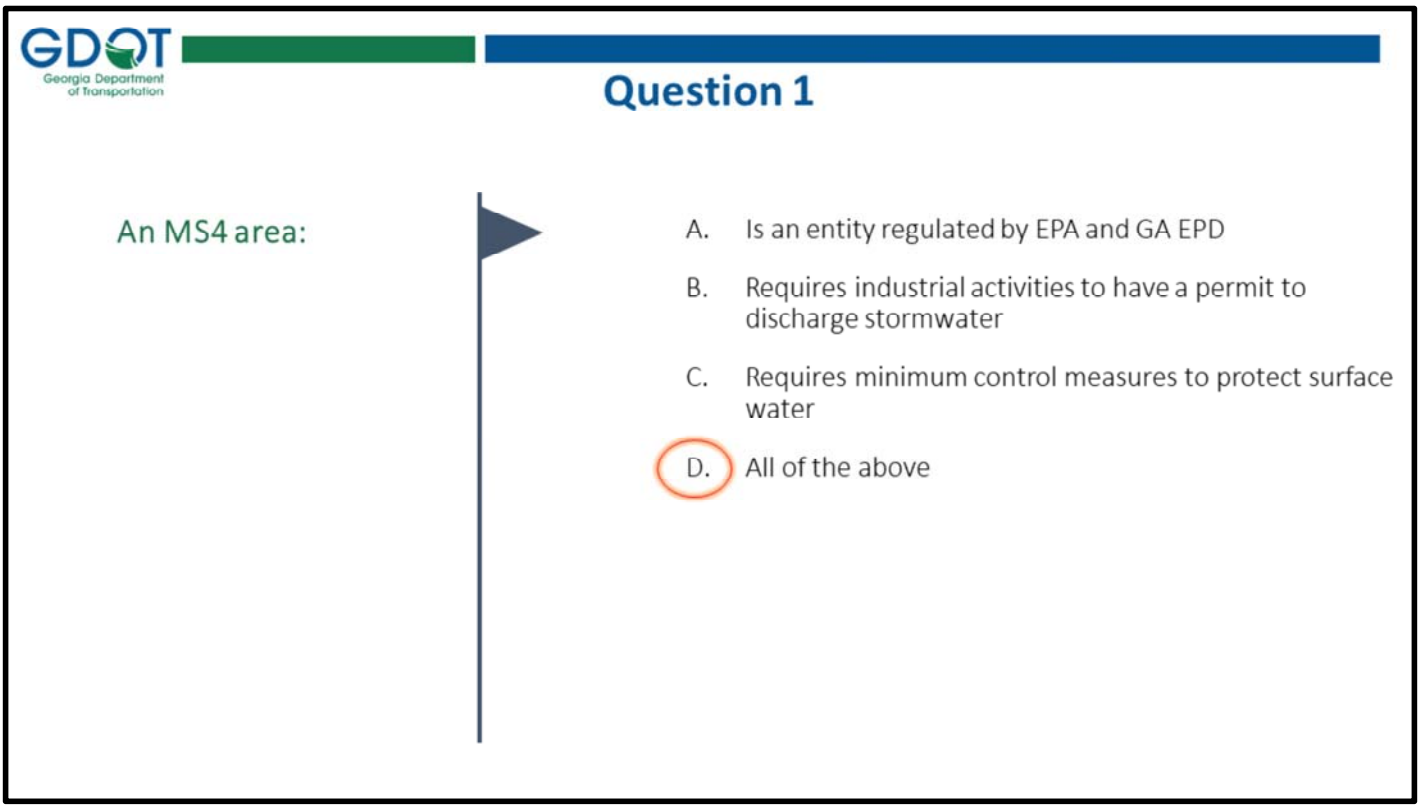
Resources

Ask your ECS for copies….

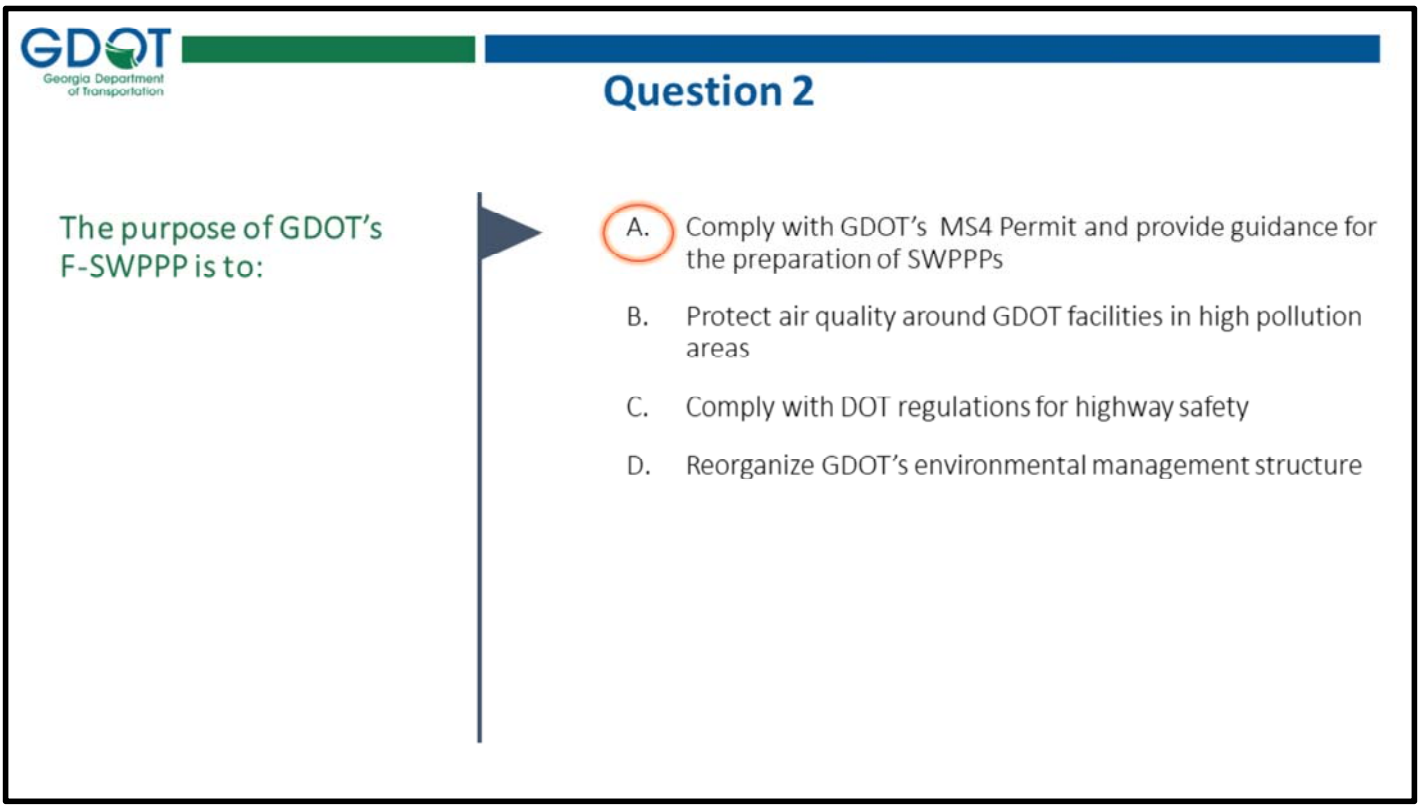
- F-SWPPP – Facilities Stormwater Pollution Prevention Plan
- IDDE Plan – Illicit Discharge Detection and Elimination Plan

GDOT Georgia Department of Transportation

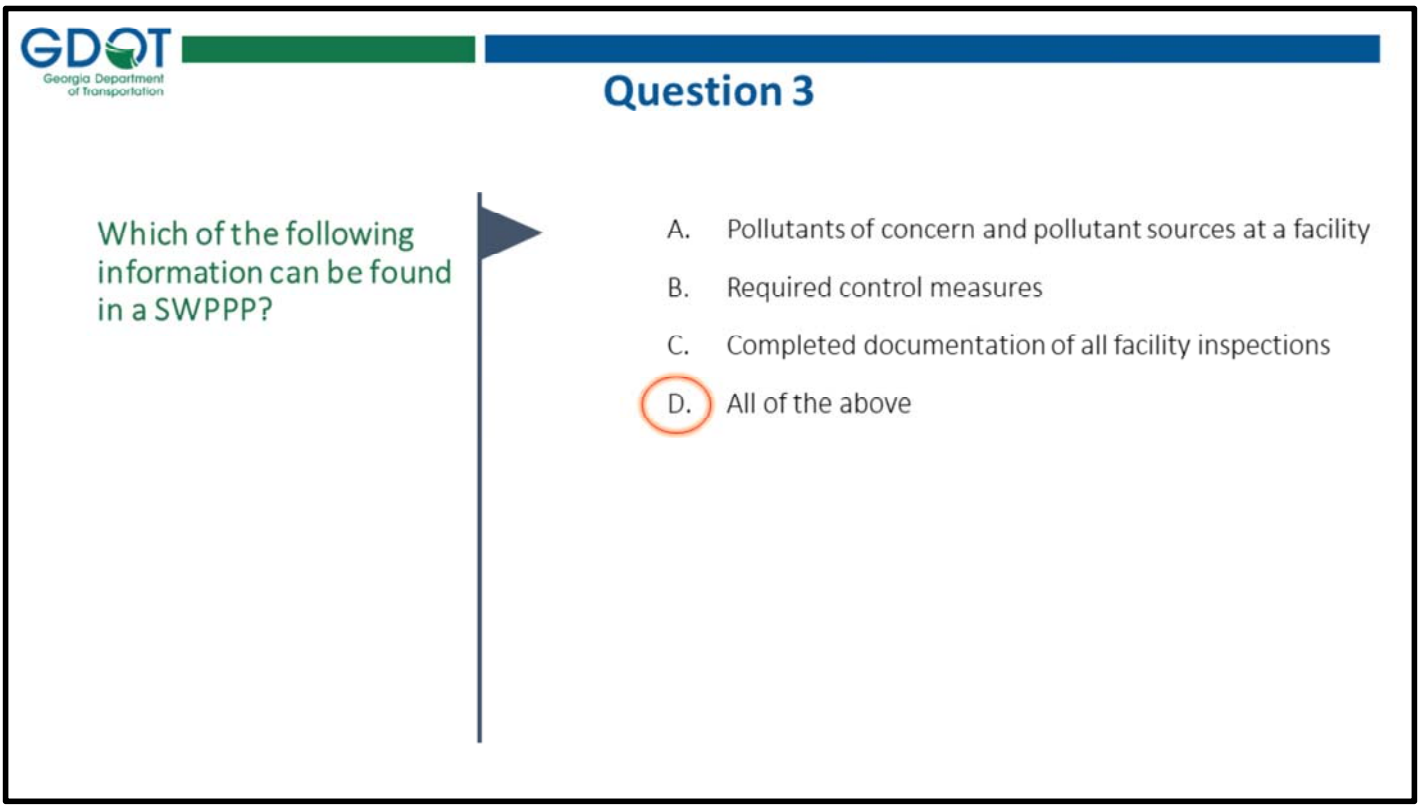
QUIZ



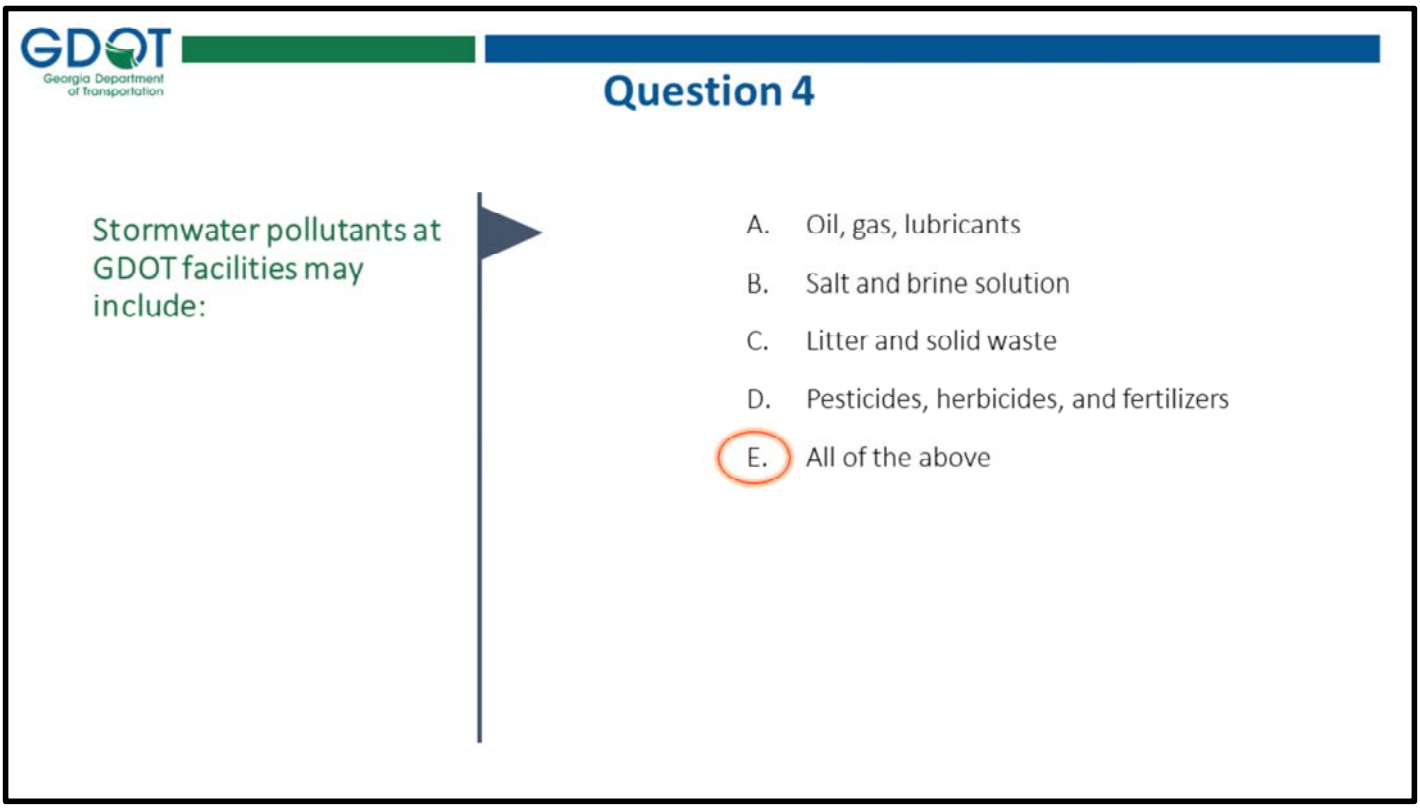
An MS4 area is an urbanized area where stormwater discharges are regulated by EPA and Georgia EPD. Regulated MS4s, like GDOT, are required to have a permit to discharge stormwater. This permit also specifies a series of best management practices to be implemented to help control stormwater discharges.



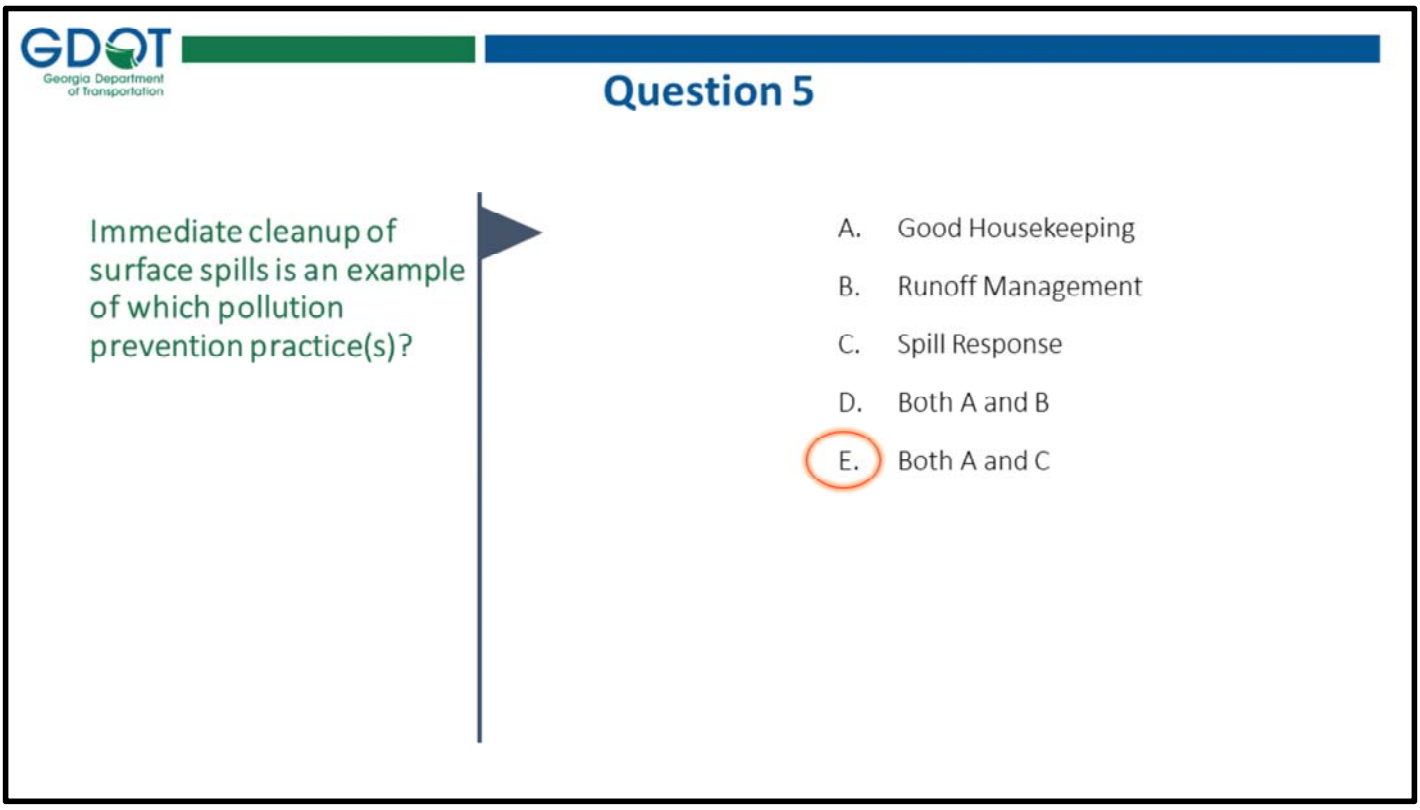
GDOT developed the Facilities Stormwater Pollution Prevention Plan (F-SWPP) to serve as our manual detailing procedures for routine maintenance activities to prevent pollution. This manual is a requirement to comply with GDOT's MS4 Permit.



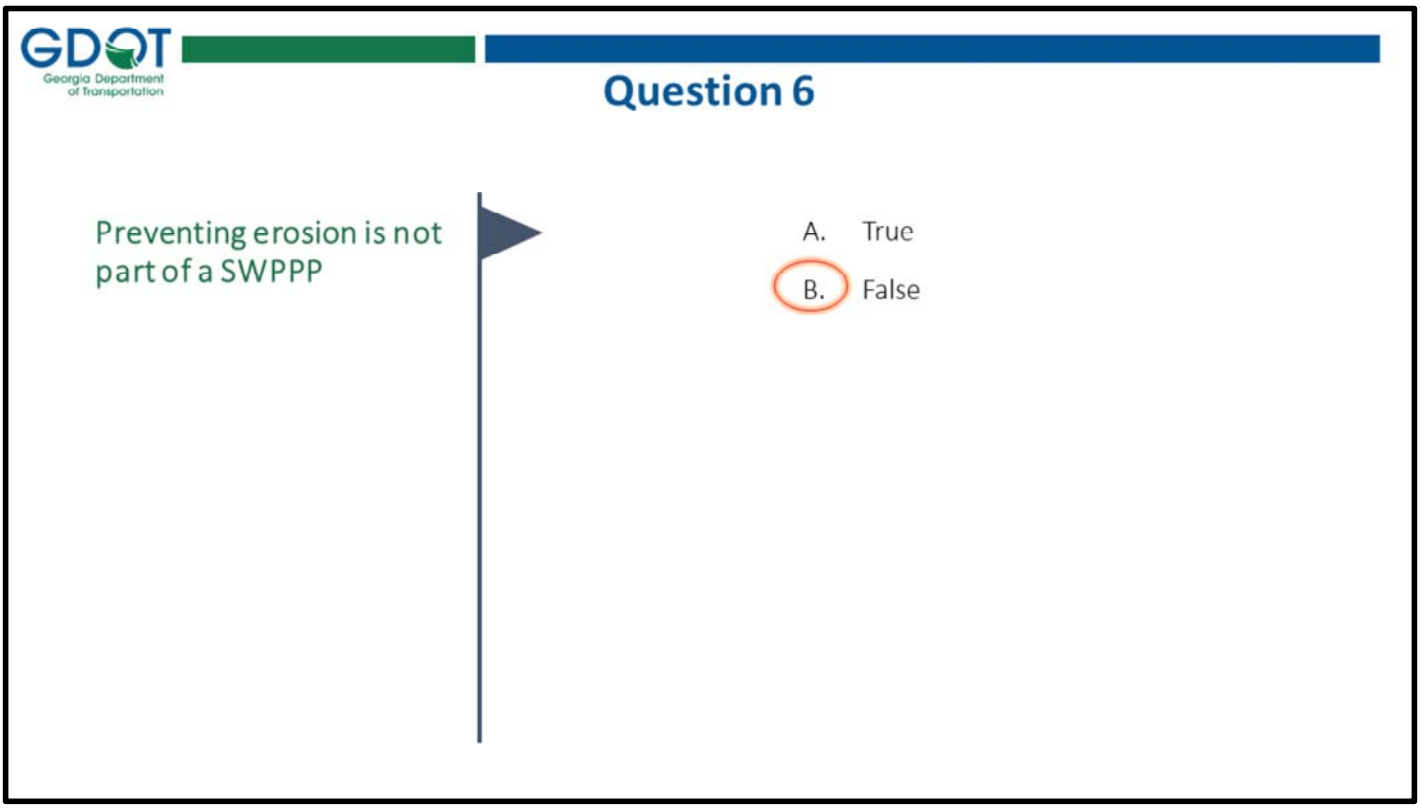
Each SWPPP should contain an inventory of potential pollutants of concern and pollutant sources at a facility, required control measures, good housekeeping practices, and completed documentation of all facility inspections



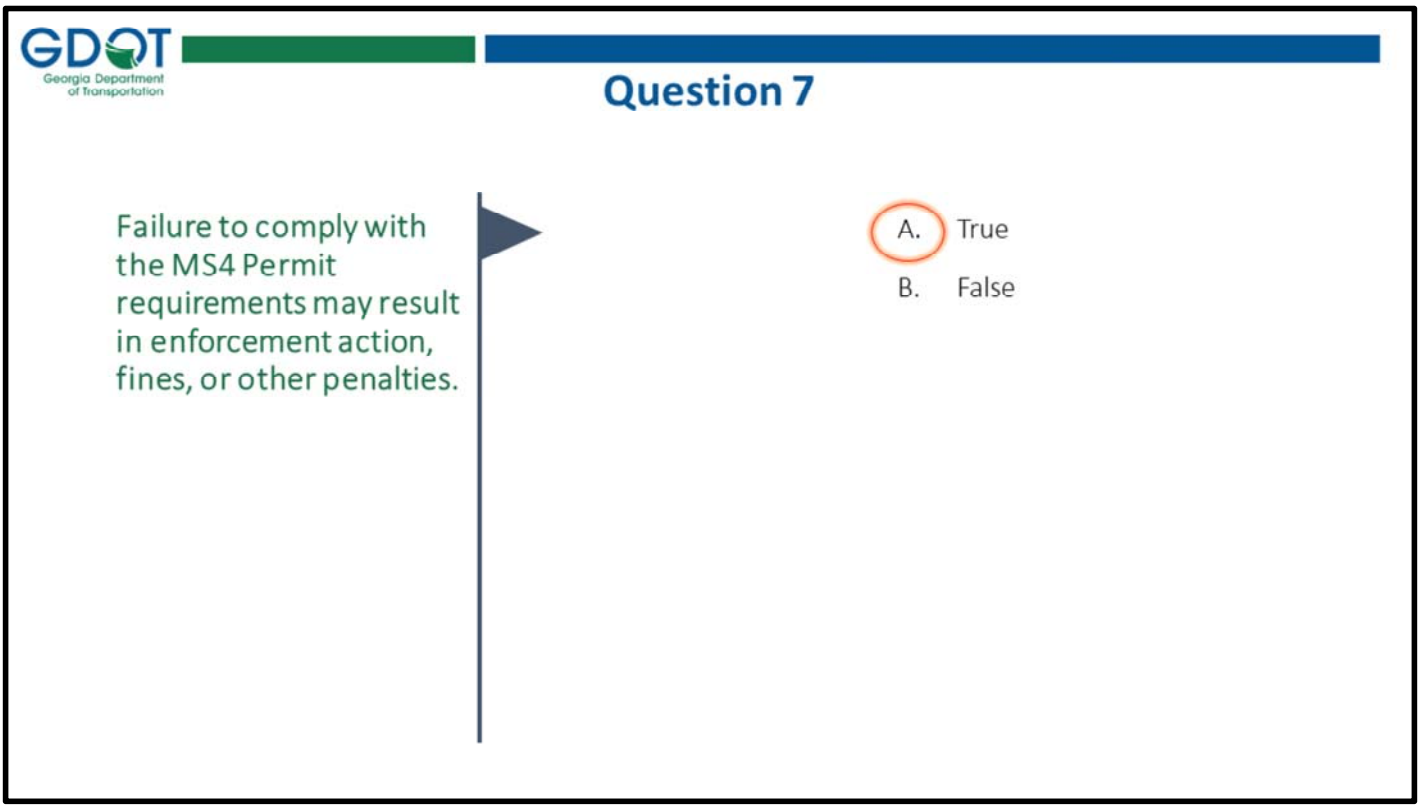
Potential stormwater pollutants at GDOT facilities may include: Oil, gas, lubricants, Salt and brine solution, Litter and solid waste, and Pesticides, herbicides, and fertilizers



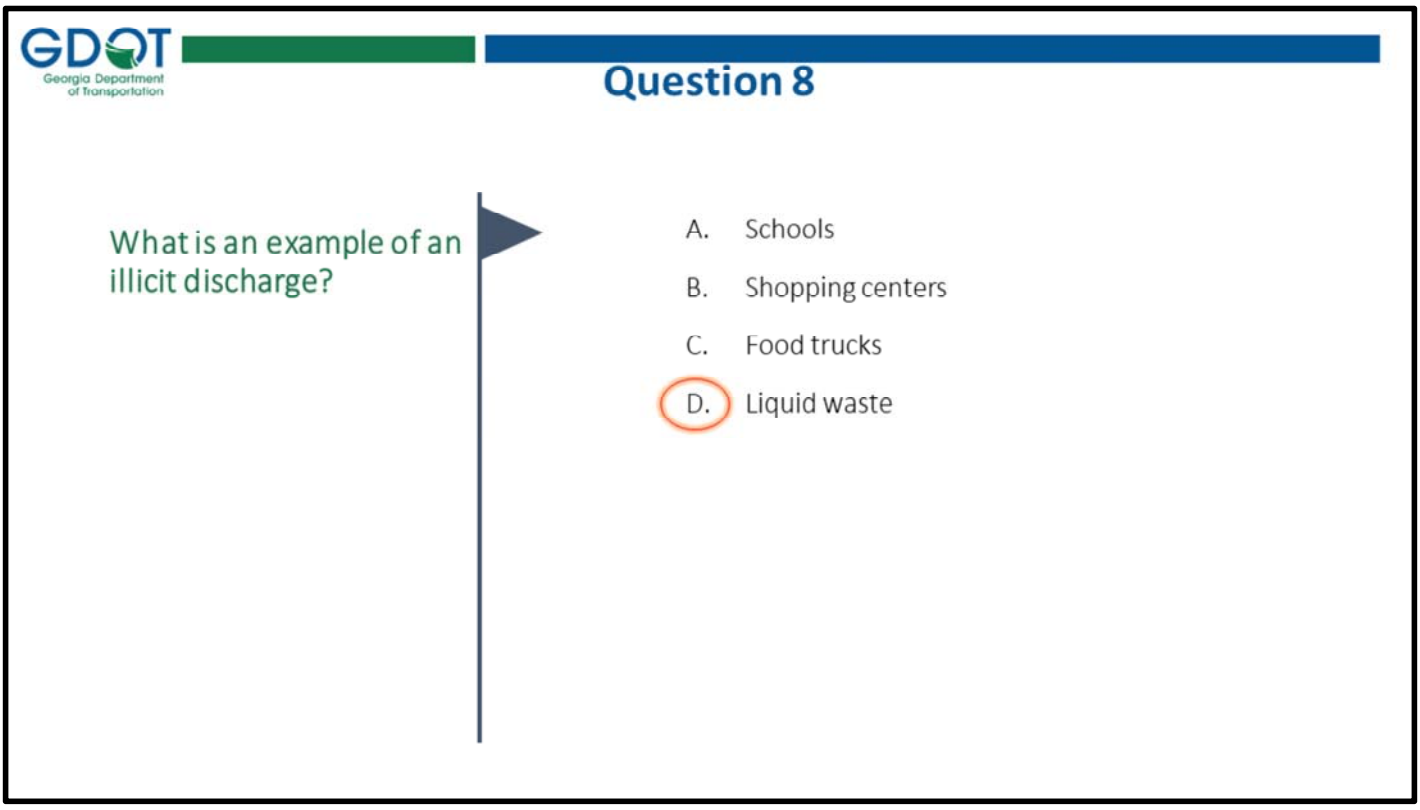
Immediate cleanup of surface spills is an example of both Good Housekeeping and the Spill Response pollution prevention practices.



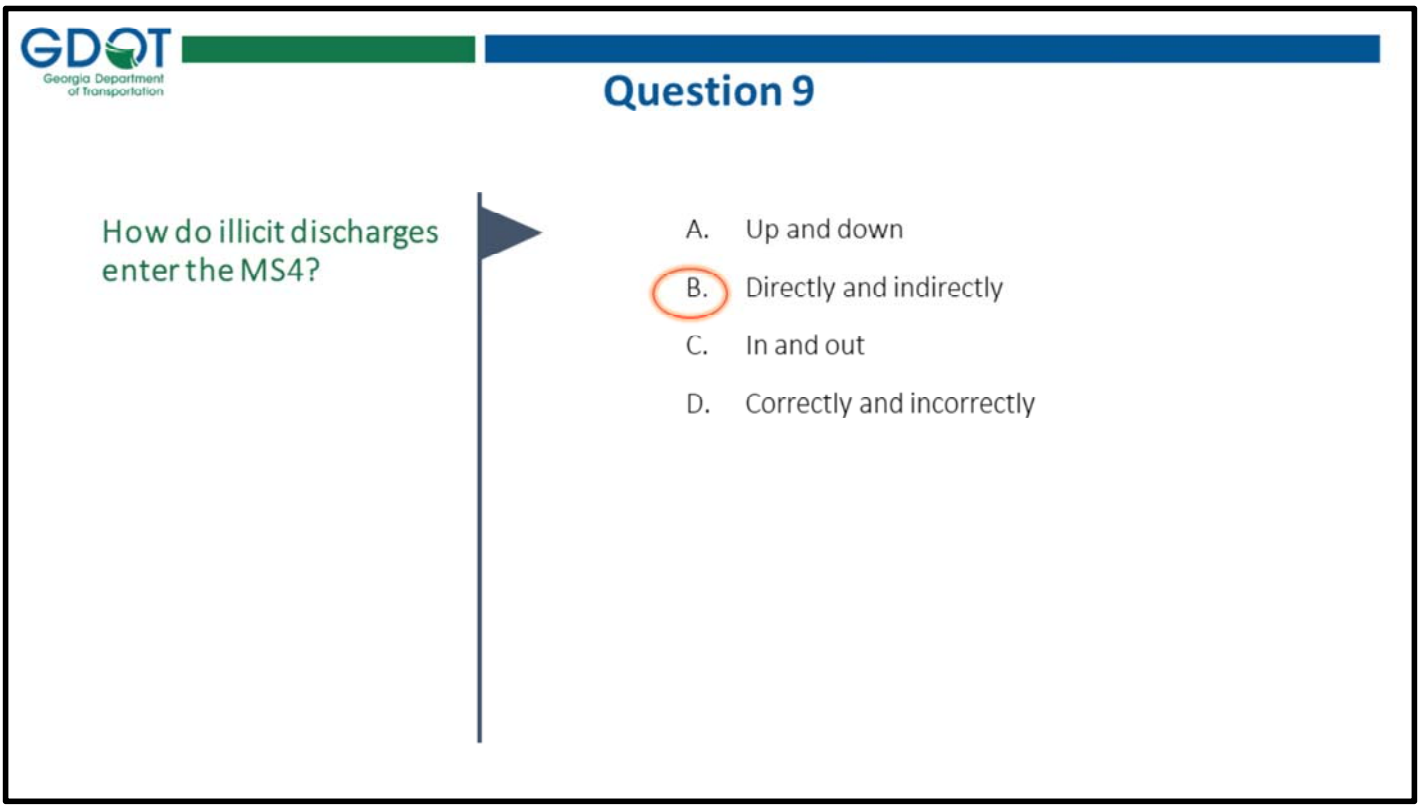
Erosion control can be a strategy in your SWPPP. Sediment is one of the primary pollutants in Georgia streams.



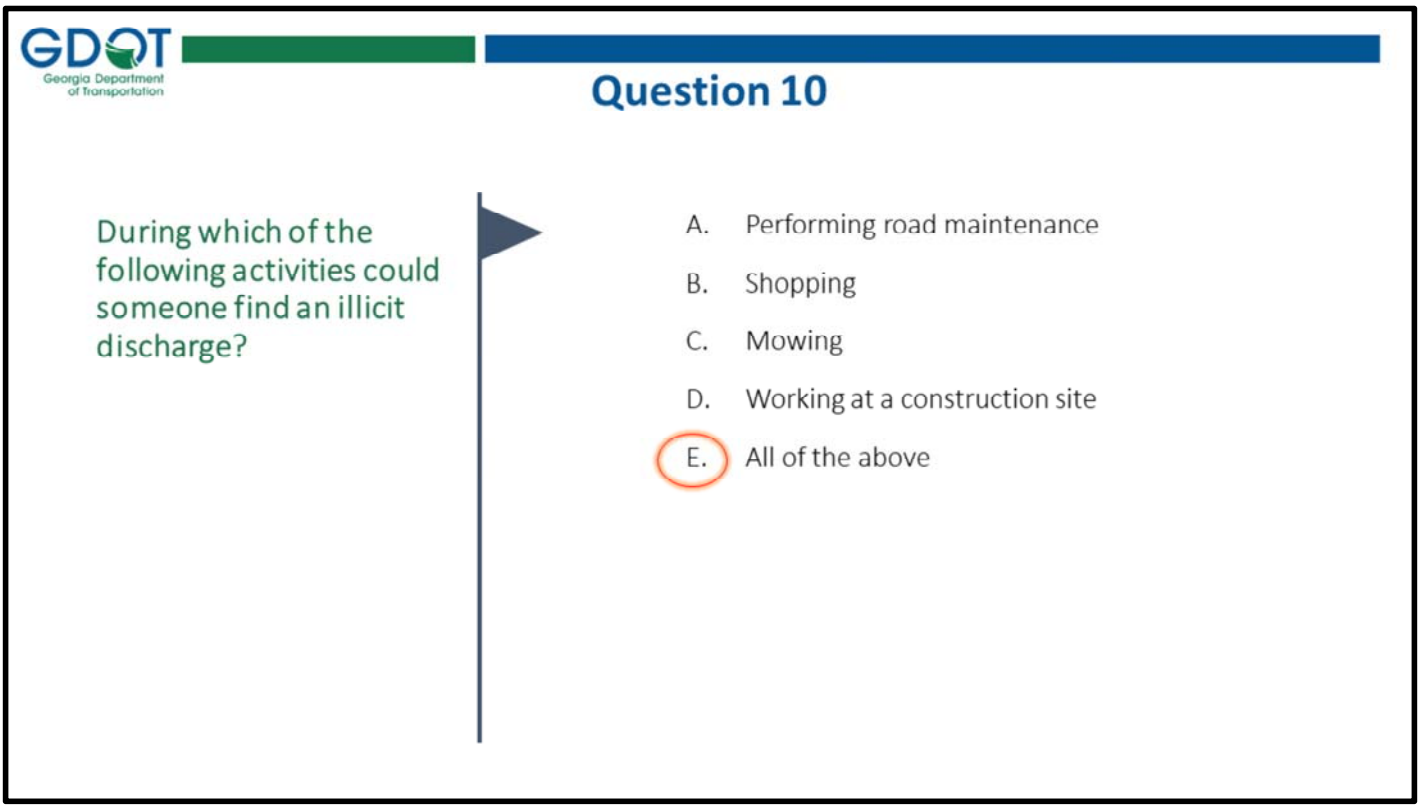
Failure to comply with the MS4 Permit requirements may result in enforcement action, fines, or other penalties.



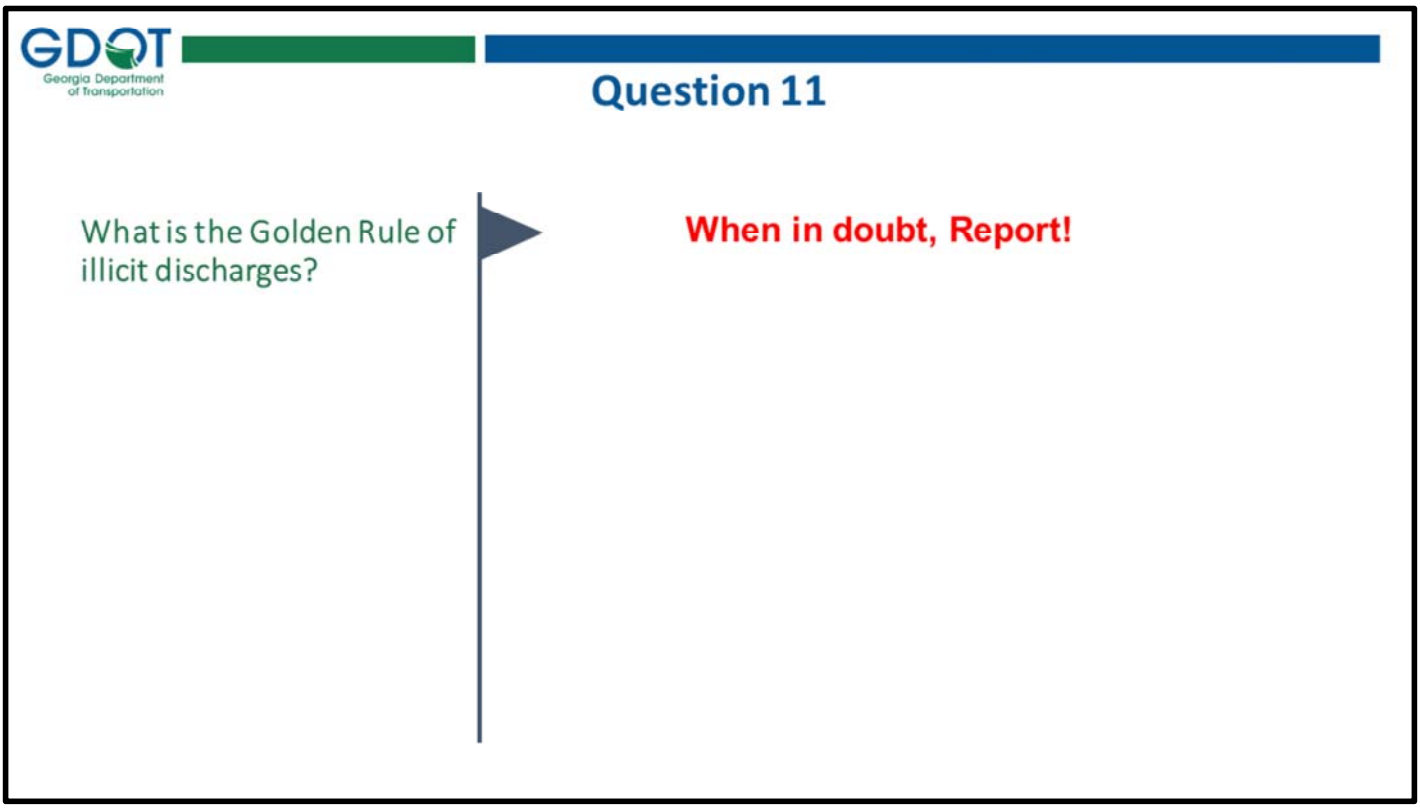
Illicit discharges are anything that enters the storm drainage system that is not a result of runoff from precipitation. Liquid waste is an example of an Illicit Discharges



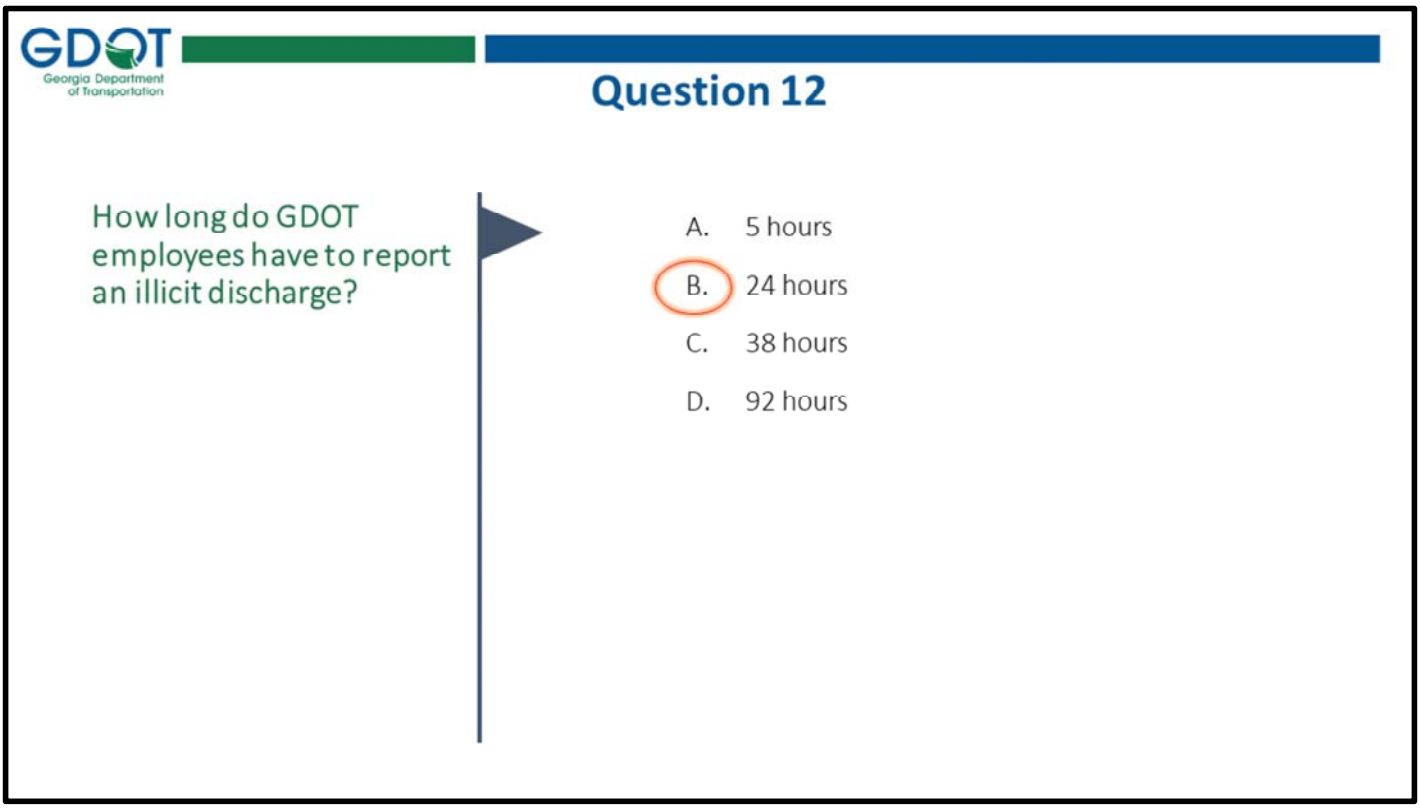
There are two ways illicit discharges enter the MS4 area are directly and indirectly. An example of direct illicit discharge is by cross connections and an example of indirect illicit discharge are dumping liquid in a stream and outdoor washing.



Everyone should serve as GDOT's eyes in the field and help report illicit discharges. These can be found during every day activities like these. Other possible ways to find an illicit discharge are by picking up litter along a roadway, street cleaning, and facility maintenance.



Always report anything that looks like it could be an Illicit Discharge.



GDOT employees have to report Illicit Discharges within 24 hours of identifying an Illicit Discharge.

Feedback Please!

If you need more information…

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